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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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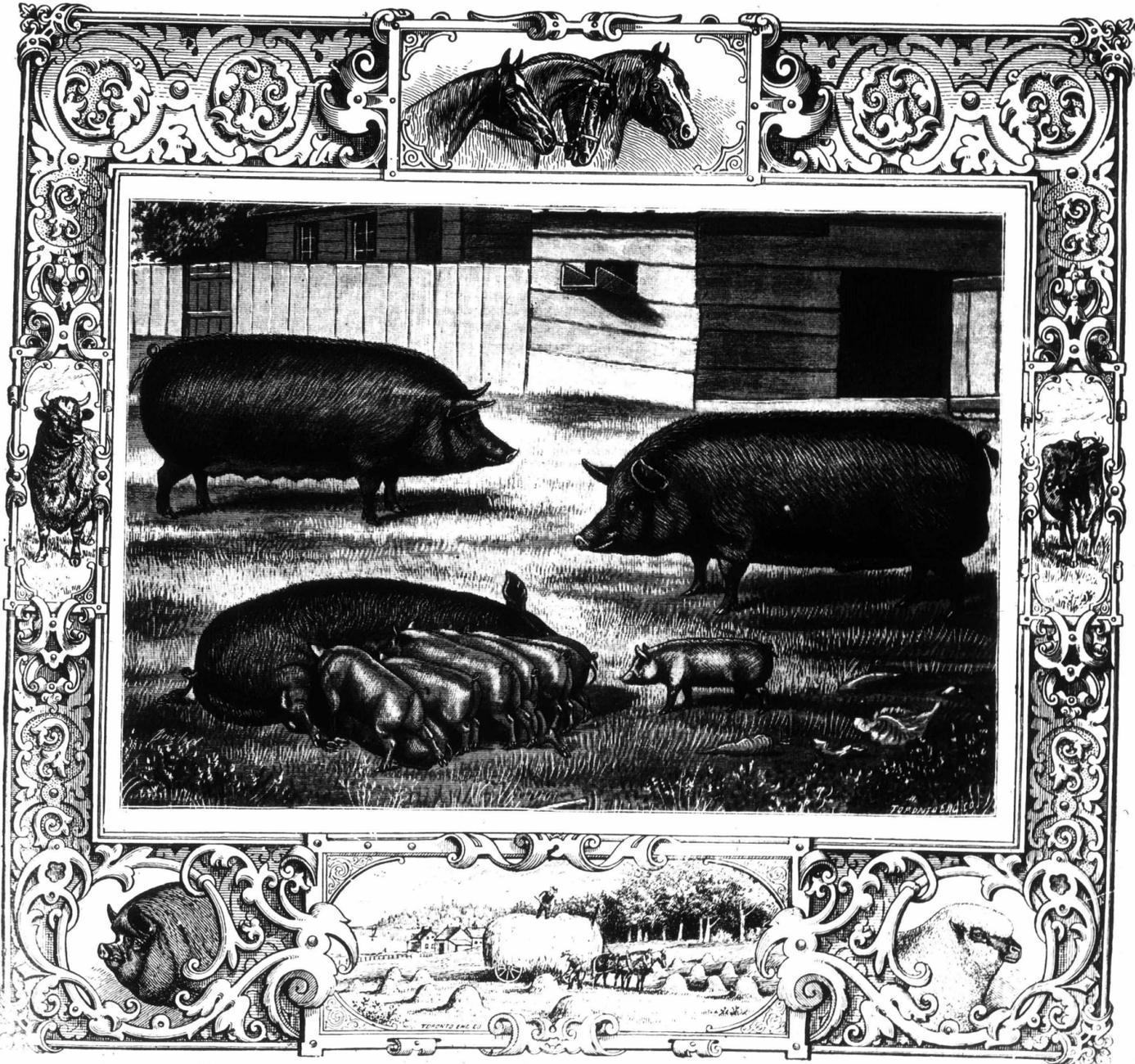
AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.

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No. 336.



A HAPPY FAMILY OF TAMWORTH SWINE.
THE PROPERTY OF JOHN BELL, AMBER, ONTARIO.

EDITORIAL.

An investigation is now going on at the Michigan Agricultural College. The professors are handing in their resignations, and a complete revolution in the affairs of that institution seems to be in progress.

When buying a new machine it is well to procure one which is used to some extent in your neighborhood, rather than to experiment by bringing in something new. The implements now made by reliable firms will all do good work.

Dust white hellebore on the cabbage plants to prevent the attacks of the cabbage worm; or, what is not so dangerous, powdered pyrethrum. Use in dry form one part pyrethrum to five or eight of flour, or one ounce to three gallons of water.

At this season of the year, when the seeding is over and before haying begins, while the farmer is not rushed so much for time, it will be well for him to look carefully over his machinery and get it ready for work. If this has not been previously done, now is the time to send for any repairs necessary, that there will be no delay when the hurried season begins.

Tent caterpillars, canker worms and other leaf-eaters are not likely to give much trouble if the trees have been properly sprayed. Nevertheless, keep a sharp look out. If only a few are discovered, pull off the leaves or twigs and step on them; if more numerous, spray again with Paris green—one pound to two hundred or two hundred and fifty gallons of water.

"Six Thousand Miles Through Wonderland" is the title of a very handsome little publication, descriptive of the marvellous region traversed by the Northern Pacific Railroad; it is neatly gotten up, very prettily illustrated and well worth reading. Any of our readers who contemplate taking a summer trip should send for a copy to H. Swinford, General Passenger Agent, Winnipeg, Manitoba.

In consequence of the postponement of the World's Fair dog show from June 12th to Sept. 19-22, the exhibit of horses and cattle will have to be closed eleven days earlier than was originally announced. Horses and cattle must now be on the ground Monday, Aug. 21st, and will be released Saturday, Sept. 9th. The time of the exhibit of swine and sheep, Monday, Sept. 25th, to Saturday, Oct. 14th, is not affected by this change.

Mr. E. C. Critchfield, in a recent number of Hoard's Dairyman, advises all dairymen to sow their ensilage corn-fields to rye the last time they work them. He says that he has tried it three years and is well satisfied. The rye provides a certain amount of pasture in the fall, protects the land from washing in the fall and spring, and gives a good crop, which may be either plowed under as green manure for the next crop, or used for early spring feed.

Fruit growers are often advised to suspend lanterns over tubs of water or traps to catch the codling moth and other injurious insects, but experiments conducted at Cornell University show that this method is of doubtful benefit, for it was found that a number of beneficial insects were also caught, and of the whole number destroyed a very small per cent. were females. It would be interesting to know how this coincides with the experience of entomologists in this country.

Replying to a question in the British House of Commons, President Gardner, of the Board of Agriculture, made the important statement that out of over five thousand head of cattle received from Canada this spring, only one was suspected of being diseased, the lungs of which had been held for further examination, which, if favorable, will go a long way towards proving to Englishmen that Canada is entirely free from contagious cattle disease—a fact well-known to Canadians.

The Symmes Hay Cap Company, Limited, Sawyer P. O., Province of Quebec, who have advertised in our columns waterproof caps for hay stooks or grain shocks, sent us five sample caps. We find them to be strong and well-made; in size they are forty-two inches in diameter at the base and sixteen inches deep from base to apex. Similar caps are much used in some parts of the United States and Europe. Their use is found very advantageous and economical.

The Horn Fly.

In answer to a question asked by a subscriber, we give the following description of and remedies for this new enemy of the farmer, which appeared in many parts of the country for the first time last season, and has already begun its ravages this season. Because of the rapid propagation of its species, only taking two or three weeks from the egg to the perfect insect, farmers must stir themselves and make up their minds to fight it vigorously if they would keep it in subjection.

This fly, which is a native of Southern Europe, was introduced into the United States about 1886, and rapidly spread over this continent. In appearance it closely resembles the common fly, but is only about two-thirds the size; from the peculiar habit of settling upon the base of the horns to rest it has received the name of Horn Fly.

Contrary to the popular ideas, these flies do no injury to the horns nor are they directly the cause of the sores often seen on the backs, for these are produced by the animals rubbing against trees and fences in vain attempts to ease their sufferings.

By inserting their sharp, dagger-shaped trunks through the skin and sucking the blood, the flies cause such great irritation that the animals quickly fall off in flesh and milk. The eggs are never laid in these sores, as some have supposed, but in the fresh droppings of the animals, where the maggots feed upon the liquid substance of the dung.

At this early season of the year, doubtless the most successful practice will be to treat the dung so as to prevent their breeding. Leave no manure lying around the yard,—get it all under the ground as soon as possible, and then either spread out all the fresh droppings so they will dry out, or apply lime or wood ashes; even road dust or dry earth will answer the purpose by soaking up the moisture.

To protect the cattle from the mature insect almost any cheap oil will answer, as train oil, fish oil, tallow or axle grease. The addition of a little carbolic acid or oil of tar not only keeps the flies away, but also has a healing effect upon the sores. Use in proportion of one ounce (about a tablespoonful) to a half gallon of oil; rub a small quantity on the parts where the flies gather most thickly.

What is known as kerosene emulsion may be sprayed on the animals. Take two ounces of soap and boil in a quart of rain water, turn into two quarts of coal oil, churn with a force pump or stir for about five minutes, so as to mix thoroughly, and dilute with nine parts (twenty-seven quarts) of water; apply with a force pump or sponge.

If farmers would succeed they must combine in using all known remedies which will aid in reducing the numbers of this pest. For a fuller description and cuts of this insect we would refer our readers to the issue of the FARMER'S ADVOCATE of October, 1882.

The Winnipeg Industrial Exhibition, which will be held in Winnipeg July 17th to 22nd, promises to be a very successful show. A number of improvements have been made since last year. The C. P. R. will carry exhibits to and from the exposition free of charge. The weather has been all that could be desired, and the crops are looking well. Altogether we have every reason to believe that this will be the best show ever held in Manitoba.

A little common sense is very convenient in every day life, and especially so when reading the glowing descriptions of certain novelties in seedmen's catalogues. These catalogues all contain a large amount of useful information and give an idea of the different varieties, but when an especially remarkable description is reached, it is well to read it with the proverbial grain of salt. The following appears in Sandelt & Son's catalogue as a satire upon such extravagant praise in advertising new varieties: "We are getting up a picture of the Extravaganza cabbage, Munchausen stock, which, by comparison with other well-known objects purposely placed near it, will show that this cabbage is as big as a tobacco hogshead, and the description which will accompany the picture will prove, if words have any power, that its flavor is as sweet as sugar, its texture as fine as satin, and its habit exceedingly early or so rarely late, or so something else, as to eclipse every cabbage ever before known, and, above all, its freedom from the attacks of insects is phenomenally remarkable; indeed, an insect which simply flies over it falls dead within twenty yards. To the market gardener it is a boon, as it sells itself, its laughing face beaming with such benevolent expression as to win the admiration of every purchaser at once." We are informed that people even went so far as to send money for this wonderful cabbage.

The Summer Course for Teachers at the Ontario Agricultural College.

The Minister of Agriculture offers the teachers of Ontario a short summer course of lectures by the college staff on agriculture and the sciences most closely related thereto. The object of this course is to show how agriculture and kindred branches of knowledge may be taught by simple talks to pupils in rural schools, and also to furnish information that will serve as a basis for such talks, say the last hour of each Friday afternoon—geology and chemistry in the fall, live stock and dairying in the winter, botany and entomology in the spring. During this summer course at the college, the forenoon will be devoted to lectures on agriculture, dairying, agricultural chemistry, geology, botany and entomology, while the afternoons and Saturdays will be given up to geological and botanical excursions in charge of a professor, a certain amount of practical work in the laboratories, and observation trips in the gardens, fields and experimental plots.

The surroundings of the college are pleasant and of such a character that, in addition to the direct instruction gained by attendance at the lectures, much valuable information may be acquired by observation in the different departments of the institution—the farm, dairy, arboretum, gardens, greenhouses, laboratories, etc. The course will extend throughout the month of July, commencing on the 3rd. There will be no tuition fee. Teachers to the number of 50, male or female, will be provided with board in the college, for which there will be a charge of \$12, payable in advance to the Bursar. Washing will be done in the college laundry, and charged for at moderate rates. Sheets and towels, four of each, must be provided by applicants for admission. We would strongly advise all teachers to lose no time in making applications to the President.

The objection which has always been urged against the teaching of agriculture in the public schools has been chiefly that the teachers are not competent to give instruction. We are pleased to be able to state that this objection will soon be removed, and, in a short time, farmers will have it in their own hands to say whether they will have agriculture taught in their schools or not. The success of this undertaking depends upon the support which the yeomanry through their trustees give. It must be remembered that few teachers will take the trouble to attend these lectures unless they expect to gain an advantage by so doing.

We hope trustees in the rural sections will show their appreciation of this move by encouraging teachers to attend this summer course, and if encouragement is not sufficient, insist that they do so. Trustees should not neglect to help this work along by offering sufficient inducements in the way of a bonus or increase in salary, so that the teacher will feel that he or she has been amply rewarded for the slight expenditure of time and money.

For circulars and additional information address the President, Dr. James Mills, O. A. C., Guelph, Ont.

When the sheep have been shorn the ticks will leave them, because of the little protection afforded by the closely clipped wool, and migrate to the lambs. Do not allow the latter to be stunted in their growth and lose flesh, when it can be easily prevented by taking a few hours to dip them. Many preparations are in the market, of which some are good, while others are injurious. Both Little's and Cooper's are highly spoken of by practical farmers, and will be found to give good results.

Besides being a great source of annoyance to human beings, mosquitoes worry and irritate live stock to such an extent that in some localities the animals have to be housed regularly, or they will lose in flesh and young stock will be stunted in their growth. An experiment conducted by L. O. Howard, Assistant United States Entomologist, shows that kerosene can be successfully used as a destroyer of mosquito. He sprinkled four ounces on the surface of a pond containing sixty square feet, with the result that all aquatic larvae, including those of the mosquito, were killed. The oil seemed to exercise a deterrent effect upon the female mosquitoes, for they still attempted to deposit their eggs, and in the attempt were destroyed. Several severe rainstorms occurred during the period of observation, and after the first of these the pond lost the glassy, iridescent surface effect given to it by the thin layer of kerosene; nevertheless, the insecticidal effect of the coal oil did not seem to be diminished, though no odor could be perceived. In larger ponds the presence of fish will usually prevent the multiplication of the mosquito; but the most favorable places for breeding are stagnant ponds, and these can be easily and cheaply treated in the above way. By the drainage of all swamp lands, the careful watching of all water barrels and tanks, and the use of kerosene, the mosquito plague can be greatly lessened.

Canadian Records Recognized.

The authorities of the Columbian World's Fair have decided to recognize the Canadian Sheep Record, also the Canadian Swine Record. Animals recorded in these records are eligible to compete at Chicago, and need not be registered in American records.

Mr. John Bell's Tamworths.

The illustration on the first page of this issue portrays three Tamworth swine, the property of Mr. John Bell, Amber, Ont. The combined weight of these animals is 2,500 lbs., yet they are smooth and attractive in appearance and very active. The female in the background is imported Sally Ann 1-3908, bred by Mr. John Norman, jr., Cliff House, Tamworth, Staffordshire, England. The other two large pigs are Scarboro Bell and Major of Willowdale, two of her first litter, sired by imported Norman's Pride. Each of these animals has been frequently shown at Canada's largest exhibitions, and in each case has been awarded first prize.

These are fair specimens of Mr. Bell's now famous herd. His present breeding stock consists of three aged boars and twelve sows; two of the boars and four of the sows were imported from England. Ten of the sows have farrowed recently, two will farrow soon. This spring nearly one hundred young pigs have first seen the light at this farm, many of which are now sold. Orders have been received from nearly every state in the American Union, and from Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Manitoba, Assiniboia, British Columbia, and a great many from Ontario. At the time of our visit the pens contained a grand lot of breeding animals and young pigs; all were surprisingly smooth and had the appearance of being easily fed and calculated to produce the finest grade of bacon and hams. They were uniformly light in the neck, jowl and back, wonderfully deep in the sides, hams full, thick and well let down, while the shoulders were fine and smooth. To many Canadian farmers these pigs present a novel appearance; their heads are not dished, nor their backs broad, two qualities much admired by many, but of no intrinsic value—in fact, a broad, fat back is not wanted by any of the pork-packers to-day, because the consumers reject all such. Although the snouts worn by these swine are long, the head is very light, and the offal less than usual. This sort will doubtless win their way among the rent-paying farmers. We have never heard of a section where they have been introduced that they have not grown in public favor. They are said to be excellent grazers, easily fed, and very prolific.

Mr. Nicholas Awrey, Ontario Commissioner to the World's Columbian Exposition, instructed Mr. Bell to prepare a full class of this breed for competition at Chicago, but owing to the authorities of this great show refusing to give this breed a class, Mr. Bell has declined to make an exhibit. What are known in Canada as Improved Large Yorkshires and Middle Whites are also compelled to show in a sort of general class, or consolidation class, which will include animals of very different types—so different that it will be impossible for any man to make just awards. The Tamworths and Large Yorkshires should each have been given a class. We were given to understand at one time that this would be done, but recently some mysterious change has come over the American managers at Chicago: they have changed their mind without giving any explanations.

Mr. Bell breeds Shropshires as well as Clydesdales and Tamworths. At the head of his flock of Shropshires is a ram imported by John Miller & Sons, Brougham, Ont.; this sheep is the sire of a lot of good lambs, which are doing very well.

The famous Granite City is at the head of the Clydesdale stud; this noble horse is as fresh and good as he ever was, and is doing a satisfactory season, standing in his owner's stable. Among the Clydes owned by Mr. Bell is a very good yearling colt which will be shown at the Columbian Exposition.

The breeder and owner of this stock is one of Canada's best live stock judges, a man widely known and as widely respected. We recommend him and his stock to our readers.

The Poultry Association held a regular monthly meeting in the FARMER'S ADVOCATE office on the evening of June 5th. After disposing of routine business, a revision of the constitution was discussed. Several important changes being deemed necessary, it was decided to leave this matter over till the next meeting (first Monday of July), when it should receive full discussion before the annual meeting, which will be held during exhibition week and of which notice will be given later on.

How the Tariff Affects the Manitoba and Northwest Farmers.

The present low prices for farm produce in this country have led a great many farmers to look a little more closely than usual into the conditions governing the basis of prices of wheat especially, and also in general the other commodities bought and sold by the farmers in the Northwest. So far as I have been able to judge from the tone of the letters bearing on the subject, as contributed to the provincial press, most of the writers seem disposed to lay the blame on the rather exorbitant prices charged for agricultural implements. Every one seems to take it for granted that the low price of grain of all kinds is altogether caused by reasons other than purely local. To begin with, the rate of freight to Duluth and Minneapolis as compared with the rate to Fort William is eighteen cents per hundred as compared with twenty-one cents with us—a difference of nearly two cents per bushel. Again, the export of hard wheat from Dakota and Minnesota is falling off every year, owing to the larger milling capacity in the States; as an instance of this, there is at Duluth and West Superior a milling capacity of about twenty-five thousand barrels a day, where four years ago there was not over a capacity of two thousand barrels a day. The mills at Minneapolis can grind thirty-five thousand barrels a day, running full time. The United States is still one of the largest exporting wheat countries in the world, but it is surprising how little of the quality of wheat raised in the north-western states is exported as wheat: this wheat goes out as flour, and the offal, bran and shorts, finds a market in the ever-increasing market in the great republic. As a rule, our two hard has sold at two or three cents less than one northern when sold for export; this year it sells for the same, but when it is remembered that what grades two hard this year is the pick of the wheat that would grade one northern, our wheat is still at a discount. Anyone can prove this who will take a sample of the same wheat to a Minneapolis miller and to a Montreal or New York exporter, and he will find that he would get at least two cents more for milling use than for export. We have had an example of this in our own Province this season; the Lake of the Woods Milling Company claim that they have not as much wheat as they want, and they have been lately, since the bulk of the wheat has been sold by the farmers, taking what was offered at three cents over the export value. If we had sufficient mills in Canada to grind up all the wheat grown in the Northwest, we would be in as good a position as the farmers in the states adjoining; but there are not mills enough, and if there were they would not have the market for their off-products, bran and shorts, or even for their finer brands of flour. The finest brands of flour produced in Minneapolis are sold in the States; it is the medium grades that are exported.

The United States is therefore the best market for our best wheat. It is also the best market for our poorest wheat. Take a year when we have a crop like that of 1891, when so much wheat was unsaleable on account of dampness; dealers could not buy it, because they dare not take risks of carrying it to Europe; it was too far even to send it to Ontario. How many farmers know this to their cost is shewn in the thousands of bushels that have been pitched out as useless on the prairie. Had we had the American market, this damp wheat could have been taken to mills within 500 miles of where it was grown and used up before it spoiled, or the very worst of it sold for feed in the immense market to the south of us. A visitor to Minneapolis market any time during the past year could have seen thousands of bushels finding a ready market at from thirty to fifty cents, that a dealer who had to export the wheat could not have looked at. But it is when we come to coarse grains that we can see the injustice that is done to this country in being shut out from its natural market more glaringly than in any thing else. Oats and barley, that have this past season been sold at fifteen and sixteen cents per bushel, could have been sold at five to ten cents per bushel more if allowed to go to American markets. Brewing barley has sold in Winnipeg for twenty-five to thirty cents, while in Minneapolis the same would sell from forty-five to fifty. The rate of freight from Brandon to Winnipeg is sixteen cents per hundred pounds, the rate to Minneapolis is twenty-two; a glass of beer sells in Minneapolis at five cents, in Winnipeg at ten. Minneapolis and Milwaukee beer sells at the same price in Winnipeg as the home product, after paying thirty-five per cent. duty and freight added. Comment is needless.

It is to be remembered besides that in oats the bushel here is thirty-four pounds, across the line it is two pounds less—this is besides the difference in price per bushel. So much for what our farmers sell; for what they buy there is now a pretty well-defined idea that they could do better, were the tariff between Canada and the States removed. The old argument that the tariff is higher in the States than with us is about played out. Let any farmer go from Emerson to Pembina and see whether he could not buy his goods of all kinds to better advantage. The fact is that while the

United States is nominally a protective country, it is really the greatest free trade country in the world. There is a system of perfect free trade between sixty-five millions of people—those people are the wealthiest people in the world, when the wealth per head of population is taken; and they are the greatest trading people in the world. I mean that on an average an American will do ten times the amount of trade in a year that is done by the average European, thus making their population for trading purposes equal to ten times the number compared with the European standard. That there are farmers in the Northwestern States no better off than farmers here is no reason why we should not improve our advantages by getting their market. No doubt the reckless credit system which we copied from the States has much to do with individual hardship over there, but we are rapidly getting into the same trouble, and the fact that we are handicapped both in our buying and selling will only make things worse here by-and-by. One of the worst handicaps that the farmer is under here is in the price of lumber. Most of the lumber used in Manitoba comes from the Lake of the Woods, a distance from Winnipeg of 145 miles; the same quality of lumber can be brought from Duluth, 470 miles, and pay twenty-five per cent. duty, and be laid down in Winnipeg at the same price. What does the farmer on the prairie want more than cheap lumber? And this is how he gets it under the National Policy.

Let anyone take a map of North America and try if he can see any reason why Canada should be cut off from the southern half of the continent. Look at the Northwest cut off from the east by a barren stretch of rock and great sheet of water, at the State of Maine running away into what should be Canada and nearly severing the eastern extremity from the Province of Ontario. The whole of the Dominion stretched to a thin line—thin almost to breaking point, across the continent, and the great solid mass of territory to the south of us. Let us examine ourselves and say honestly, Are we honest when we say that we do not want anything to do with these scheming Yankees; that we want to keep Canada to ourselves? Was there no selfish reason that dictated the so-called National Policy? And now has it been a success? Let the Maritime Provinces answer, mouldering in a dry rot amid unsurpassable riches of mineral wealth; Quebec under the heel of a middle age ecclesiasticism, and her children fleeing in thousands to the south; Ontario with her barley and horses, that used to be a fruitful source of income to her industrious farmers, now unsaleable at home for want of the southern market, and her annexation clubs now forming all over the country; Manitoba and British Columbia, almost too young to know good from evil, and already writhing under the prick of an indefinable something, they know not almost what—let the whole Dominion speak, with its burden of debt mounting up by the hundred thousands, nay, almost by the hundred millions, the population unable, even with the aid of immigration, to hold its natural increase in the past ten years, all answer that the National policy has failed. Those in high places speak to us of relief to be obtained from a federation of the British Empire; free trade with England at the expense of other parts of the world. Why we have free trade with England now; our farm products and manufactured goods enter her ports free. Everything is talked of but admission to the only natural market we have, and one has only to look at the map to be convinced that man is trying to keep asunder what was never intended by nature to be separate. Let the farmers of Manitoba look to this; it will bear enquiry, and it is my opinion that when once they see the truth in its proper light, that it will not be a mere sentiment that will keep them from insisting on getting what is their natural right. M. W.

At a regular council meeting of the Royal Agricultural Society of England, held recently, the veterinary committee reported that they had had the question of abortion in cattle under their careful consideration, and recommended asking the board of agriculture to undertake at as early a date as possible an exhaustive inquiry into the nature and causes of this disease. They had prepared a memorandum on the subject, which showed that although there are no official statistics showing the losses caused by abortion in cattle, such losses have now become exceedingly serious, and they are very widely spread amongst the herds of the country. The cause of the affection has never yet been definitely ascertained, and, consequently, there is no degree of certainty attaching to any of the remedies that may be applied. To show the difference of opinion which prevails as to the nature of the disease, it is only necessary to mention some of the various causes which have been assigned to it, such as ergoted grasses, unsuitable food, impure water, "sympathy," bad smells, disease in the bull, tendency to fatten, etc. That the disease is either contagious or infectious, practical men entertain no doubt, but the question as to the means whereby the contagion or infection is communicated still remains unsolved.

Active preparations are being made under the direction of Sir Charles Tupper for the proper representation of the agricultural resources of Canada at the show of the Royal Agricultural Society of England, which will be held in June.

STOCK.

Breeding Grade Stock.

BY D. F. WILSON, BRANDON, MANITOBA.

Breeding animals, as practised by the breeders of pure-bred stock, is an art, but there are many farmers who believe in the improvement of their stock that have very vague ideas of the principles to be observed.

At one time a neighbor of mine was outlining his intentions with regard to his cattle. He was first going to use a Shorthorn bull, then on the progeny a bull of some other breed (I have forgotten which), and so on with four distinct breeds, fondly imagining that in the last cross he would have combined all the good qualities of the four breeds. Another farmer who heard him summed up pretty correctly by saying, "and by that time you will have a pure-bred mongrel". In such a case as this, where there was one cross of each of four breeds, all perhaps equally prepotent, two of the great laws of breeding—heredity and atavism—would be made directly antagonistic, and no idea could be formed beforehand what the progeny would be like. Now, instead of this being the case, a farmer should have an idea what the stock he breeds will be like, though

"The best laid schemes o' mice an' men gang aft a gley."

As a rule, when a farmer wants to improve his cattle, he buys a pure-bred bull that he believes will suit, and uses him in his herd for a couple of years, by which time he thinks he should get rid of him, as his own get are then coming back to him. He may then buy another, though, as is often the case when money is not very plentiful, he thinks he can scarcely afford to buy another pure-bred animal so soon, and therefore uses a calf of his last bull's get out of his best cow, or else obtains a good grade bull calf from one of his neighbors. If he buys a pure-bred animal again, he probably takes the first one he comes across, so as to save further trouble, or buys one because he is cheap. Now, if the farmer started right, he when purchasing his first pure-bred bull decided what he wanted to raise, and having settled this it would not be hard for him, by studying the characteristics of the different breeds, to decide which of them he should select from. In making this selection care should have been taken that the animal was a typical one, also that it was one likely to beget stock of the type desired. When after two or three years it is thought advisable to get a new bull, the first pedigreed animal that is to be had is not the one to buy, just because it is a pure-bred beast, as if that was all that was required. He should be carefully selected as being suitable to use on the young half-bred heifers—one who will correct in the progeny any faults of the mother rather than perpetuate them; in fact, as far as can be seen, an improvement on the former bull, but at the same time one of similar type, for be it remembered the first bull was bought with a fixed view, and if sight is lost of this we fall into the same error that the man spoken of who would make use of four different breeds would do, but to a lesser extent. Now, supposing the first bull has proved himself an exceptionally good one, begetting stock of a quality leaving little to be desired in a first cross, why part with him for another, and that an untried one? The second animal may to all appearance be a better beast than the first, but it does not follow that his stock will be better, for it is a well-known fact that many noted show animals have got but second-rate stock. It would, however, be unwise to disregard the law of heredity by breeding to an inferior animal because his get had proved to be good ones; it would probably be a case of atavism, and by the same law the bad qualities apparent in the bull might be expected to crop out in future generations, no matter how carefully bred. When, however, a farmer becomes possessed of a pure-bred bull that is a handsome animal and a good specimen of the breed, and begets uniformly good stock, he need not be afraid to use him on his own get, and he will be safer in doing so than if he bought a new bull whose qualities as a sire were unknown to him, and most decidedly better than if he used a grade, which, to say the least, would be a step backwards.

I am aware that any one advocating inbreeding is treading on dangerous ground, but no one can deny that to it we owe the present excellence of pure-bred cattle and sheep. The greatest breeders among those who brought the different breeds into prominence having practised it, we might almost say the closer the breeding the more successful the breeder. Why should not farmers follow their example to a certain extent? The early breeders inbred to set a type; the farmer also wants to set a type. He wants uniformity in his flocks and herds; it makes them worth more to him. When inbreeding was carried too far by some of the first breeders, it showed first in lack of fecundity; there is no need for the farmer to carry it to this extent with grade stock, but when a pure-bred male has been secured that has proved himself to be a good one, it is a great mistake to part with him, as is too often done.

The Southdowns of Mr. Henry Webb and Lord Polwarth's Border Leicesters are instances of the most successful breeding, in both of which cases no outside blood was introduced for nearly half a century.

When the progeny of related animals do not do well, or there is anything the matter with them, it is generally put down to the relationship of the parents, when in reality this may have nothing to do with the trouble. There is no reason why farmers should not breed grade stock in such a way as to give their animals an uniform appearance, and of the type which they find most profitable under their conditions, but this can not be done by using untried sires or those bred from stock of opposite types.

Which is the Best Breed of Sheep?

Read before the last meeting of the Sheep Breeders' Association by James Tolton, Walkerton, Ont.

To answer this question, defining the particular breed of sheep that is best, might appear on casual observation as treading on dangerous ground, and also might appear a little presumptuous on the part of the writer. It is true with sheep, as with other lines of live stock, that there are particular sorts that are better adapted than others to certain conditions and localities. For instance, the Clyde or Shire horse, with his large bone, great muscle, and heavy weight, is the most suitable for moving heavy loads; but if style, action and speed are required, we would not look among either of these breeds, but go to the blood or carriage horse with their fine style, splendid action, and clean bone. Or if we want a cow to make gilt-edged butter, we would likely find her among the so-called dairy breeds; or if we desired cattle more particularly for stall feeding or grazing for beef purposes, it is not at all probable we would find them among the "dairy breeds," but would get Shorthorns, Herefords, or Polled Angus. If Providence, aided by the skill of man, has created and perfected the horse for his multitudinous purposes, and the cow for her economic uses, the more useful animal, the sheep, has not been left in the rear. Among sheep, we have as many or more breeds than among the sorts above mentioned. We have the fine, medium, and coarse wool sheep, some producing wool suitable for the soft raiment of those who live in luxury, others from which are clipped wool suitable for making the coarser clothing of the toiler and wage earner. We have the light and nimble sheep that can glean more than its existence from the rocks and hills where the pasturage is scant. Again there are sorts that are better adapted and more profitable in climates that are warmer than ours, and we have those breeds that are common to us and well adapted to our climate. We have those with white faces and legs, and some have brown faces, others with black faces. We have sheep that have horns, while some have none, and sheep that have what are commonly called foretops, others have bare faces, and so on almost without end.

It may be said that the question is not being answered, which is the best breed of sheep. It is not the purpose of this paper to name one particular breed as the best for every person who breeds or intends to breed sheep. But it would be passing strange indeed, if from the numerous breeds we have, with their varied qualities, a selection of the best breed for each individual breeder could not be made.

There should be good and valid reasons why any particular breed should be selected as the most suitable, and when selecting a breed it should be considered which sort under the circumstances would be most profitable and suit the conditions and surroundings best, or else be more pleasing to the eye and taste. It is true that there are several breeds that are common to us that may meet one or all of the requirements, so that after all every sheep breeder or person desirous of becoming one should answer the question for himself, after making due allowance for what may seem the popular demand.

When the selection of the best breed is made, what I would like to impress on the readers of this paper is not to attempt to keep sheep for the purpose of keeping weeds down on the summerfallow, or to run on the roadside to be chased by every passing dog in the summer, and just eke out an existence around a straw stack in the winter,—for by this method they will neither fill the pocket or please the eye; but, on the other hand, give them the attention that has been recommended many times by papers read at meetings of this Association. I do not know that there are any domestic animals that respond to kind, attentive and liberal treatment more readily than the sheep.

I may not have answered the title of this paper in the way some may have expected, but if by word or sentence I have assisted in drawing the attention of the general farmer to the importance of keeping more sheep, giving them better attention, and breeding to pure-bred sires, the object of this paper has been accomplished.

At a recent meeting of the Executive Committee of the American Shorthorn Breeders' Association the following resolution was moved by S. F. Lockridge, seconded by John Hope, and unanimously adopted: "That it is the sense of the committee that it is not practicable nor judicious to attempt to hold a convention of Shorthorn breeders during the World's Fair, but in case that there should be any considerable number of stockholders who shall insist that the former resolution be carried out, the Executive Committee hereby authorizes the president and secretary to fix a date and arrange a programme for the meetings."

Are Holsteins Profitable Cows for Winter Dairying?

[Read at the last annual meeting of the Holstein Breeders' Association by R. S. Stephenson, Ancaster.]

The subject which I have been allotted is one of great importance at the present time. As winter dairying is destined to become in a very short time one of the greatest sources of revenue for the Ontario farmers, it is, therefore, of the greatest importance that we should have the best cows for the purpose, as our success in the dairy business depends very largely on having a breed of cattle capable of consuming and turning into milk and butter profitably the large amounts of coarse grain and fodder we can raise on our farms. I will endeavor briefly to place before you some of the reasons why I believe the Holstein to be the best breed for the general farmer to keep, who makes dairying one of the chief branches of his business. First, the Holstein combines more desirable qualities than any other breed. The most valuable is the production of milk; for this purpose they have been bred for centuries, and are acknowledged to excel all other breeds. They mature early, coming into milk when about two years old, and hold out well through nearly the whole year. Their milk is not only abundant in quantity, but rich in quality. They are large, hardy and rapid growers, fattening readily when dry, and make a good quality of beef. Many people dispute the idea of a general purpose cow, and we are frequently reminded of the folly of feeding four or five hundred pounds of useless carcass for eight or ten years in the shape of a large milch cow, for the sake of getting an indifferent carcass of beef at the end. There might be some sense in this sort of argument if it were solely for milk that cows were usually kept, but as the general farmer, especially if he follows winter dairying, wants large, growthy calves that will make good veals or fine steers to feed, he certainly cannot get them from the small, ill-shaped cattle often seen in dairies, and the value of the little extra feed it takes to maintain the large, thrifty cow, such as the Holstein, is very much over-balanced by the value of the calves and the larger quantity of milk she will give. And when we find a breed of cattle that are capable of consuming and digesting large quantities of food and turning it into milk, and at the same time producing fine, growthy calves, like the Holstein, I claim that is the most profitable breed for winter dairying.

Chatty Stock Letter from the States.

Live stock men all feel that the World's Fair will not make an adequate show of live stock. The appointment of the chief of that department was so long delayed that it has been impossible to make proper arrangements. The show of horses and of the dairy breeds of cattle promises to be most satisfactory. The general agricultural display, however, no one can find fault with, and the exposition on the whole is beyond the power of most people to appreciate.

Fine cattle continue to sell fairly, but not up to old-fashioned prices.

Fancy light cattle and hogs are outselling the big, heavy drones. Early maturity pays. Many 1600 lb. cattle and 300 lb. hogs are selling lower than 1200 lb. steers and 200 lb. pigs.

The first five months of 1893 Chicago packers slaughtered 35,458 more cattle than during the corresponding period of 1892. The number handled here was nearly 900,000 head. The general feeling is, however, that the slaughtering at all points combined will show a large loss for the entire year.

A man interested in packing circles said all the hogs slaughtered in Chicago last month made 60c. per head. The fact remains, however, that hogs are very high, and that packers can do no more than hand-to-mouth business at such prices.

The lack of confidence in the financial world, due largely to the fear of flooding the country with silver and draining it of gold, has lately cut an important figure in the live stock business. The supplies of marketable stock have been moderate and the consumptive demand very strong, or prices would not be so much higher than a year ago, especially in hogs and cattle. Of course, the financial uneasiness has been used for all it was worth, and more, by the buying and slaughtering interests, and idle and sensational talk has, in some cases, caused much trouble. In the main the country is in good fix to stand a severe shock, and as a rule shocks do not come when they can be withstood. If there is anything like the shortage in cattle this year that is expected the markets ought to rule strong. Cattle feeders have not been overly joyful at the result of their work, but in the main they have obtained satisfactory results.

The calves are being drawn to market quite freely by the good prices for those in fair to good veal condition. "Native" calves have lately sold at \$4.50 @ \$6.00, and Texas calves at \$2.75 @ \$4.75. These prices tend to cut off future cattle supplies at quite a rapid rate.

We don't hear very much about dehorning nowadays, but an astonishing proportion of the best cattle come to market without their natural and useless head gear. At the prices for fine stock it is a shame that so many scrub sires are allowed to exist. Sheep are being marketed much more freely than last year and are selling at lower prices. However, producers of mutton have been fairly well remunerated. The extent of the Texas mutton crop so far this year has been quite unprecedented.

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THE FARMER'S ADVOCATE & HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

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10. All communications in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

- 1.—No award will be made unless one essay at least comes up to the standard for publication. 2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling. 3.—Should any of the other essays contain valuable matter, not fully covered by the one awarded the first prize, or should any present different views of the same topic, and we consider such views meritorious, we will publish such essays in full, or extracts from them as we may deem best, and allow the writer ten cents per inch (one dollar per column) printed matter for as much of such articles as we publish. By this rule each writer who sends us valuable matter will receive remuneration for his labor, whether he be the winner of the first prize or not. See section 6 and four following in publisher's announcement above. We extend an invitation to dairy farmers in all parts of Canada to send us concise, practical letters, giving the results of their past year's experience in feeding dairy cows. 1st.—In winter feeding, what have you found the best foods, quantity and quality of milk and economy of production considered? 2nd.—With what do you supplement pasture in summer and fall feeding? 3rd.—In winter, do you feed twice or oftener per day, and why? Give particulars of your method. A prize of \$5 will be given for the best article embracing answers to the above questions. Essays to reach this office not later than July 1st. A prize of \$5 will be given for the best essay on farm drainage with special reference to methods of doing the work, the materials and implements used. Essays to reach this office not later than July 20th.

FARM.

The Farmers and the Tariff.

BY D. F. WILSON, BRANDON.

Never before in the history of Canada have the farmers been so much of one mind as they are at present with regard to the demand for the modification of the tariff, and that it is a just demand no one of unbiased opinion will deny. It is the outcome of crop failure, coupled with low prices, together with other causes, for which the farmers have themselves to blame. Had the prices of the principal products kept up and fair crops been grown, nothing would have been heard of the trouble, except as a party cry. Nevertheless, the imposition exists, and farmers who were supporters of the present Government would have gone on bearing the burden, imagining that it was just the right thing, had not hard times caused the shoe to pinch, giving them cause to think when they found that while they were getting poorer some others at least were getting rich. This had the effect of causing farmers to hold meetings, when resolutions were passed and petitions signed, asking the Government to remove the duty on those manufactured goods which are necessities on the farm, and in this way enable them to produce farm products at a smaller cost. Meetings of farmers called for the purpose, Farmers' Institutes and the Patrons of Industry, which are some hundred thousand strong, might be said to be unanimous in their requests, and they could not, by any means, be called unreasonable. As an instance of the unanimity on this question, the petition circulated by the Brandon farmers' meeting, which obtained between four and five hundred signatures, but four of those asked to sign it refused, and but one of these was a farmer. Now, the Government has been asked to make these alterations in the tariff, just cause having been shown why they should do so, and that those engaged in the most important industry of Canada were suffering by the present arrangement. Why has the change not been made? Farmers want new machinery to carry on their farming operations this season; they want lumber to put up the necessary farm buildings; they want fencing material, in order that they may be enabled to go more into mixed farming, which is now acknowledged to be the only course by which Manitoba can become a prosperous country; and they want binding twine to tie up this year's crop. The duty not being removed on these articles means thousands upon thousands of dollars out of the farmers' pockets this year, of which but a small percentage goes to make up Canada's revenue, the bulk of it going into the hands of the manufacturers and middlemen. It is true half the duty has been taken off binding twine, but the farmers asked for the whole of it to be taken off.

The Finance Minister has promised that he and some of his colleagues will travel through the country and enquire into these matters. What bosh! He knows now what is wanted better than six months' travel would tell him, for it is not to be supposed that these gentlemen will travel "incog," and a progress through a country is not the way to find out the condition of its people.

Agriculture being the principal industry of Canada, it should be fostered before all other industries; and those engaged in it being unanimous in their requests, why is it they are not acceded to? We must suppose that those engaged in industries of less importance have been able to bring a very great influence to bear on the Government in order to have their high protective tariff retained. Firms that can afford to make presents of a hundred thousand dollars must be able to expend very large sums indeed where their interests are concerned, and money has a wonderful influence. Has the present Government so fostered the infant industries that they are now fostering the Government, to the detriment of the farmers and the general welfare of the country? Under such circumstances should not farmers be justified in losing confidence in the present or any other administration?

The Governments, both Dominion and Provincial, are spending public money to promote immigration, the class of immigrants wanted being those who can and will engage in agriculture. Can we expect such men, coming from free trade Britain, to be contented with their lot here, when they find that everything they have to buy to carry on their farming operations with costs so much on account of a protective tariff? Lately received a copy of the Liverpool Daily Post, a paper with an immense circulation, in which there was a letter entitled "Protection in Canada," evidently written by an Englishman farming in Manitoba. Such a letter in such a paper as the Post would do more to prevent emigration to Manitoba than a dozen agents would overcome. The farmers of Manitoba and the Territories want immigrants to come in, but of what use is it to get them here if they are not satisfied. They give the country a bad name, and the opinion of such men as we want carries weight. The endeavor should be to make each new settler an immigrant agent through his letters to his friends, and not have these letters have the

opposite effect. We expect most of our immigrants to engage in agriculture, then how ridiculous it is for the government to hamper the farmers with a "protective" tariff. Farmers have a right to blame the Government for the very large sum they collectively will have to pay extra this season for different articles they may require to carry on their business with, but they have themselves to blame for this large expenditure for many previous years. The root of the trouble really lies with the farmers themselves, and on this part of the subject I propose to give my views at some future time.

Timely Notes for June—No. 2.

ARE WE GOING TO THE WALL?

I am afraid, yes, if the number of chattel mortgages, suits, etc., registered during the past year are any guide. When we find the Postage la Prairie Board of Trade seriously, and with certainly no intention of belittling their section of country, presenting the solemn fact to Mr. Van Horn that there were 1,374 registrations in 1892 in that district of chattel mortgages, County Court and Queen's Bench suits, against 474 of the same in 1887, we must believe, however much our wishes may tend the other way, that the farmers are going down under their burdens. The towns in many instances are flourishing, but how many farmers are? The conditions are altogether too unequal under which they fight, and the farmers are not all fools. The tariff presses very unfairly upon the farmers, who chiefly buy heavily taxed articles; hardly any of their products can now be sold at a profit (or only at a very small one); being tied down to the land, they can not "turn round" and take up another calling, or even another branch of their own profession, with the same facilities that a grocer or a butcher could; their indebtedness is often of such a nature that it cannot be readily extinguished, or their assets, in the shape of buildings, land and stock, are such that they cannot be readily negotiated for loans. Let us look our troubles squarely in the face, and not be afraid to tell the present government what we need and demand in the way of tariff reform. Let us also insist that if the government desire protection with a big P, let us have it a "National Policy," and apply to the nation, and as the farmers are the major portion of the nation let the policy be largely in their favor. Tax cattle, horses, sheep, pigs, etc., coming into the country heavily, say as much as agricultural implements, also all grain, meats, butter, lard, and all other products that can be produced on the Canadian farm. If the Canadian manufacturer makes the Canadian farmer pay thirty-five or forty per cent. too much for his machinery, let the Canadian farmer compel the said manufacturer to pay four or five cents per pound more for his bacon and butter. I think we should soon have tariff reform; then, and the first to squeal would be the "Red Parlor" monopolists. The farmers are slowly awakening to the stern fact that they are being taxed off the face of the earth, and they must have a change.

HOW MUCH DO YOU PAY FOR LOANS?

A great many of the farmers of Canada are carrying a heavy indebtedness in the shape of mortgages, chattel mortgages, etc. I think if some of them would only reckon the cost before borrowing money, they would never submit to such extortion. The usual rate on good security—that is, security upon security—is eight per cent. nominal. Let us see now what it is in reality. Suppose you want to borrow \$500 on your farm, worth even at the lender's valuation \$2000, you will be charged inspection fee, millage, drawing mortgage, registration fees, searches, etc., say \$20 on an average. Then you will probably be required to insure your buildings if worth anything, say for \$300 more, at probably three per cent.—also deducted from principal of loan. Say the loan is for three years, you would receive to commence with \$500 (\$20 + \$27 insurance) = \$453, on which you would, of course, have to pay eight per cent. on the \$500.

Table showing interest calculations for a \$500 loan over three years at 8% nominal rate.

Or in the three years you pay \$623 for the use of \$457; or \$166, or rather more than 121.5 per cent., for the use of the money for three years.

Even if you get off with the barest expenses you will still pay \$10 + \$10 + \$10 + \$500 + \$3 for the use of \$480 (being \$500 less \$20 expenses), or \$623 for the use of \$480 for three years = \$143, or nearly 10 per cent., instead of 8 per cent. you fondly imagined yourself to be paying. How much greater rates must those be paying who borrowed at 9 and 10 per cent. nominal? or those who have given chattel mortgages in addition, or are paying compound interest on arrears? The moral is: Keep away from all money lenders, whether incorporated into companies or individuals playing a "lone hand." It's hard enough to make a living on the farm when you are out of debt, and almost certain ruin if heavily in debt.

GENERAL.

Don't buy any binder yet, your crop may not be worth cutting—wait a little longer. Keep the hoe going where needed; you won't have much time after you begin haying. "INVERTA."

Weeds.

BY J. HOYES PANTON, M. A., F. G. S.
GRAMINEÆ (Grass Family).

This is one of the most important orders among plants in providing forage and grain food, but it also contains some very troublesome weeds, among which are the following:—

Bromus sccalinus (Chess).

Prof. Fletcher referred to this weed in a late issue of the *ADVOCATE*, and gave some interesting experiments he had tried, to show that it is not deteriorated wheat, but a genuine species of plant-producing seed, and from this seed chess can be invariably grown. I may here give some of the reasons that may be urged in favor of this view, and in contrast to the popular view regarding its origin:—

1. The plant is so completely different from wheat that botanists place it in another genus (*Bromus*), wheat being of the genus *Triticum*.

2. If chess is sown, it invariably yields chess. Degenerated wheat sown under favorable conditions should return to wheat, but this never does. The most devoted evolutionist would not expect to see develop in the space of a few months a plant so unlike, in structure form and habit, that from which it is said to be derived. It is only through long periods of time that changes can be effected, so as to get even a variety; but in this case one season and only a portion of it brings about such a remarkable change that the plant is ranked in another genus.

3. Farmers who are careful to sow clean seed seldom are troubled with chess.

4. Chess will mature seed under adverse conditions, though the plant be only two or three inches high, but if conditions are favorable it grows three feet high. This may account for its not being seen in good crops, and yet seeding the ground for a more suitable time when the wheat crop is injured by frosts. It then usurps the soil, and chess plants become quite visible to the farmer.

5. The conclusion of all men who make plant-life a special study is, that chess is a typical plant, produces seed yearly, which, if sown, results in a plant of the same character, and that wheat seed will not produce chess, nor can chess produce wheat.

6. Wheat is grown in some places where chess is not known, and the wheat is sometimes winter-killed without any appearance of chess.

7. Wheat is often winter-killed and not followed by chess. The remedy to get rid of chess is to be exceedingly careful to sow clean seed.

Couchgrass (*Triticum repens*)

Triticum repens (Couch Grass, Quach Grass).
Fig. 37.

This perennial with creeping root can boast of almost as many names as localities in which it grows. It can withstand the roughest of treatment and most adverse conditions. The cut represents this plant, so that it can be readily identified; the spikelets are arranged along the upper part of the stem in the opposite way to what we find in perennial rye, which closely resembles couch grass in form. In rye grass the spikelets are flat, and not edgewise as in couch grass.

The following methods have been followed successfully in destroying this weed:

1. Plow deep about the first of June, and sow buckwheat at the rate of two bushels to the acre; when this is in full bloom plow it under and sow buckwheat again, and plow in this crop about the end of September. This will enrich the land and clean the field.

2. Manure in the fall and plow. In the spring cross-plow and harrow about the time the grass is starting to grow. When time to sow corn, plow and harrow, so as to prepare for corn. If the corn is planted about the first week in June, it will get a good start, and if thoroughly hoed the quach grass can be kept down and finally got rid of by another crop.

3. Corn sown broadcast so as to cover the ground, harrowed and rolled, will smother out couch grass.

4. Plow early and deep in the spring. Throughout the summer stir up the ground frequently with a gang-plow. In the fall plow deep, and next year grow a hoed crop. Where the roots are numerous, they may be raked together and carted off. It is useless to work at couch grass in wet weather, for under such conditions every joint is likely to sprout.

Sataria glauca (Foxtail).

Common in stubble at the close of the season. *S. Viridis* is another variety; a comparatively harmless weed.

Panicum Crus-galli (Barnyard Grass).

A very coarse grass, usually growing in the barnyard or along lanes; it lies flat on the ground, has coarse stems, swollen joints, broad linear leaves, and the flower clusters in a dense mass. This annual seldom usurps ground occupied by useful plants.

P. capillare (Witch Grass).

The leaves are very hairy and the flowers very much spread, but forming a dense panicle. This grass usually appears in the latter part of summer. The flower stalks break up in the fall, and may be seen rolling over the fields, blown about by the wind, and finally collecting in the fence corners.

*Avena Fatua* (Wild Oat)

Avena fatua (Wild Oat). Fig. 38.

A very troublesome annual in some parts of the Province. It is very hardy; the seeds, oat-like in appearance, are quite hairy at one end, and bear a short awn at the other. The plant has a spreading habit of growth and ripens early, so that it soon seeds, unless a crop is grown which can be cut before the oats ripen.

To get rid of this pest the following methods may be adopted:—

1. Sow barley; this ripens before the oats, and thus prevents them from seeding. Follow by a crop well hoed.

2. Sow barley, and seed down with clover; this prevents the oats ripening for two years. The clover may be followed by fall wheat.

3. Barley sown, seeded down with clover, and this followed by turnips well hoed.

4. Gang-plow in the fall; after a short time plow well. Cultivate in the spring, so as to encourage oats to sprout; then cultivate, and sow barley. The great object is to keep the oats from seeding, for being annuals they must soon be overcome.

This ends a description of over one hundred weeds, which we shall present in tabulated form in our next communication.

Agricultural Records.

About the heaviest yield of Tasmanian wheat on record (says the *N. W. Post*) comes from the Don, Messrs. Jefferey & Henry, of the Seaview Estate, had two acres of wheat threshed recently, which gave the enormous return of 208 bushels, the grain being perfectly clean. This part of the estate has an unprecedented record for heavy yields, and about six years back, Mr. James Suckling obtained 1100 bushels of marketable potatoes from it, which he sold at 45c. per bushel of sixty pounds. Mr. William Henry states that the land has been allowed to lie idle for a couple of years, and after having been run with sheep was used as a fattening paddock for pigs, and the refuse, chiefly boiled peas, has turned out excellently as a manure.

Mr. B. Summers, remarks a costal journal in Tasmania, has just cut on his farm on the Morville road 21 acres of oats, part of a paddock, from which he threshed 200 bushels. We believe that this is a record yield for Australasia, and perhaps for the world. The crop was six ft. 4 in. high. This fact is vouched for by Mr. Morey, in charge of the threshing machine, and several other gentlemen of unimpeachable veracity. We would be pleased to hear from Canadian farmers who have large yields to report.

Cultivation.

Under this term is included all working of the soil, both in the preparation of the seed bed and the after cultivation of the crop. The first part of the subject has already been dealt with in our columns this season, so we will content ourselves with the second, which is the summer cultivation of crops such as rape, turnips, potatoes, corn etc.

The first question which arises is, Why do we cultivate these crops at all? The answer which a person would naturally give would be to destroy weeds. This is quite true as far as it goes, but it does not go quite far enough. That the destruction of weeds holds a very important place all will admit, for if they were not kept under, the crop would soon be smothered out, but this is not the only value of cultivation. The working of the soil breaks the capillary tubes which draw the water from the subsoil to the surface, and forms a mulch of loose soil over the tops of them; thus the water is not allowed to be pumped directly upon the surface, where the heat of the sun would quickly evaporate it. Again this mulch prevents the earth being heated up to as great a depth as it would if the surface were hard. This loose material allows a certain amount of air to pass through it, and though it does not appear so, the air always contains more moisture on a hot day than on a cool one, owing to the more rapid evaporation of moisture from the ground, but this water is in such a fine vapor that we do not notice it. When the warm air reaches the cool soil it deposits the water which it had held in suspension as vapor. An example of this is seen when a tin pail of water is drawn from a cool well on a warm day; little drops of water will be deposited on the outside.

Cultivation allows advantage to be taken of the dews and every light shower, for were these to fall on a hard crusted surface they would merely wet the surface, and in about an hour after sunrise the ground would be as dry as ever. But this is not the case with the well-worked field; here the loose soil offers no opposition to the downward percolation of the water, which is all absorbed by the earth, and the mulch prevents its drying up. Hence we see that surface cultivation stores up for the use of the plant, water both from the subsoil and the sky. The next question to ask ourselves is, When should we cultivate? This depends to a great extent upon the nature of the crop, but a good general rule would be to cultivate sufficiently often to prevent the surface from becoming so firm that it will not act as a mulch, and also to prevent the capillary tubes from regaining their natural condition. Always stir the soil after a rain, for two reasons,—the first, to preserve the water which we know to be in the soil, and secondly, to break up the crust which forms to some extent on all soils but especially on heavy clay lands.

Corn and potatoes should be cultivated with a light harrow as they are coming up, and even before if the surface becomes encrusted; this treatment kills the weeds and stirs the soil at the same time; when the plants get too high for this style of working, start the scuffler.

Some make a mistake by cultivating too deeply. We have seen fields which had promised good crops nearly ruined, because the horse-hoe was allowed to run too close and deep, thus cutting the roots of the corn plants, and turning the potatoes out by the roots. A scuffler can be run much closer to the plants if it merely skims the ground, in this way greatly reducing the hand labor, for when thoroughly worked with the horse-hoe one hand weeding will often be all that is necessary. Some will say that if the scuffler does not run deep the weeds will not be cut. If the work has been neglected it will be necessary to go deep enough to cut the roots of the weeds, but it is a great mistake to allow a field to get ahead of the work in this way.

All the purposes for which we hoe will be accomplished better and with less labor by means of shallow and frequent cultivation. The draught being less a horse can cover much more ground in the course of a day than when the scuffler is run deeper.

As before mentioned, the destruction of weeds is a secondary consideration, for if the land is cultivated sufficiently to keep it in the proper condition, all weeds will be smothered out, for weeds, like human beings, cannot live without air. If a long period is allowed to intervene between the times of cultivation, the roots of the weeds will store up food, and thus be enabled to send upshoots at once when cut. Deep cultivation is injurious, for if the soil is stirred to a considerable depth the capillary tubes are broken at just that distance below the surface, and the subsoil water is deposited at too great a distance to be within the easy reach of the fine roots of the young plant. If the land be not cultivated at all, the water will be pumped to the surface, where it will be at once evaporated by the heat of the sun; or, as Professor Storer puts it, "The real desideratum is to maintain the best capillary connection between the lower layers of soil where the store of water is, and those layers in which the plant roots are growing. More than this is not wanted, and pains must consequently be taken to break up continually the connection between the surface and the root-bed, for it is much better for the water to go out by transpiration from the plants than by mere evaporation from the surface."

Experiments go to prove that sufficient water does not fall as rain to supply the requirements of the plants, and also that the evaporation from a soil hard and compact is much greater than from one which is cultivated, therefore the great need of stirring the soil so that the plants may take advantage of the natural soil water is readily seen, for in time of drought cultivation often means just the difference between success and failure.

Fences and Farm Economy

(Concluded).

BY W. A. HALE.

Wherever the law is in force for preventing the straying of animals on highways and public places, an opportunity is thus given for commencing the economy in fencing, by first abolishing those along our roadsides. I have often been asked, "How are crops to be protected from passing droves and stray animals?" The answer is, simply by keeping the droves moving, and by preventing animals from roaming at large. I live on one of the old thoroughfares along which a very large proportion of the cattle and sheep designed for the New England markets pass. Many years ago, when roadside fences were still considered necessary, I cleaned up both sides of the road for the double purpose of keeping down weeds and for making hay, and thus prepared a most tempting feeding ground for all these numerous flocks and herds; and while these animals were by permission of the drovers regaling themselves on the roadsides, large portions of them often found their way through open gates or weak places in the fence, so that not only did I lose the best part of my two tons of roadside hay, but a deal of my meadows and grain fields was trampled over as well. In order to try and prevent this latter loss, I some years ago took down in spring about 2,000 feet of roadside fence with the intention of replacing it with a new one. On reckoning up the cost, I found that with posts and boards, etc., the total cost would be at least \$100. Charging interest on this at 7 per cent., and allowing 8 per cent. more for annual repairs and depreciation of fence, it would represent \$15 a year, and with the extra labour caused by the fence in ploughing, mowing and raking by hand, in driving round to and opening gates, and in extra road work in winter from drifts caused by this fence, say \$10 a year more, or \$25 in all. I found that the annual tax of this fence would be equal to the total loss of five tons of standing hay in this field alone, while practically I have lost none at all, and have had a full crop of uninjured roadside hay as well. Since then, 1,000 feet more have been removed, and as time allows all the rest will follow, and it is very satisfactory to notice that this custom is steadily spreading in every direction. To those who prefer to fence their roadsides in order that their cattle may run upon the aftergrass, I would suggest that, if feed in the pastures is short in the autumn, it would be far better, for many reasons, to either grow green corn fodder to take its place, or with the money saved from the cost of fencing to buy and feed bran, than it would to injure the meadows by pasturing them. But if the roadside fences are an unnecessary nuisance, the boundary line fences are in many cases worse. As the law exists in Canada to-day, any man can compel the owners of all the adjoining properties to build half the dividing fences, whether the adjoining lands be in timber, in wood, or what are generally known as unimproved lands. In the United States this condition of things is very properly not allowed, and in most of the States the law goes more fully into the matter, and, being based upon the fundamental principle of all just herding laws, provides that every man must keep his animals upon his own land, and in whatever way suits him best, so long as he does not impose upon any one else in doing so. Taking example from these older sections of the country which have evolved a much more equitable code of farm laws than exists with us, a movement has been set on foot, based upon these improved laws, and the attention of the Quebec Legislature is now being called to the importance of modifying the present existing and unsatisfactory laws. As the boundary fence law at present exists, it is imperative upon each to build and maintain, under the direction of the rural inspector, one half of all the fences bounding his property, whether they are of any benefit to him or not. This, in the old days when land, labor and lumber were of very little value, may have been a rough and ready cross-cut way of settling the matter; but as civilization has brought about a different condition of things, it does seem as though a modification of these old customs should now be made more in accordance with the advanced state of agriculture, and in such a way that any man may, if he so wish, relieve himself of an extravagant and often wholly useless burden, greater in actual annual cost than all his yearly taxes, yes, and probably his insurance as well.

This proposed addition to the fence laws is not intended as an amendment to those already in force, for, in all cases where two neighbours find that they both wish to make use of a boundary fence, the present laws and customs would be their guide; but, where a desire to economize exists on the part of one or both neighbours, then the proposed addition would be made effective. Furthermore, in order to give ample time for considering and testing the merits of the proposed reforms, it is only asked that the new law be made operative in such municipalities as desire to adopt

them. The following is the change petitioned for, expressed in two articles:—"The councils of any rural municipality may, by by-law or resolution, bring into force article 426 b. of the code; the said article shall only have effect from the first day of November next following the passing of the said by-law or resolution:—"

"426 b. The owner or occupant of land, adjoining all timber lands, wild lands, wood lots, unimproved lands and that part of farm lands on which horses, cattle, sheep, swine, goats, poultry, or any domestic animals are not at any time allowed to pasture, or run at large, cannot compel the owner or occupant of such unimproved lands to build nor maintain any part of a boundary fence adjoining such lands. The owner of improved farm lands adjoining land of another, having erected at his own expense, or become possessed of a boundary fence, adjoining land, the present value of one half of the amount of such boundary fence, whenever such adjoining owner or occupant begins to make use of said boundary fence by pasturing any domestic animal or of animals upon the land bounded by such fence, whether it be in pasture, meadow, stubble or ordinary farm land, said value to constitute a purchase of that portion of the boundary fence, and which is in future to be maintained by the party so purchasing.

In cases where a boundary fence has already been built, if the owner or occupant on either side ceases to use his land as pasture at all times of the year, or if his land be timber land, wild land, wood land, or unimproved land, he can no longer be compelled to maintain any portion of such boundary fence, but may, by giving notice in writing to his neighbour before the first day of December in any year, remove on or after the first day of December following, whatever part of the fence had been allotted to him, and be exempt from maintaining the same, so long as his land adjacent to said fence is not used for pasturing purposes; first, however, giving his neighbour the right to purchase this said portion of the boundary fence, at a fair valuation; the price, in case of disagreement, to be decided by the rural inspector of his division."

These laws, should they come into force, would, I am convinced, be the means in many cases of bringing about an enormous saving without in any case causing an injustice to any one.

Chess.

In regard to the chess and wheat question, I am going to give you some hard nuts to crack. In the first place, I say that wheat will turn to chess, and more so, I can prove it. When I was a boy, about forty-five years ago, we moved to the township of Maryborough, in the county of Wellington, before that township was surveyed. We made a little clearing the first year. The next year some families began to move in, and among them the family of Thibadoes, a Frenchman, took up land about a mile from us. They cleared a small patch, about three acres, as near as I can tell, and sowed it with fall wheat. What was the result? It was over half chess. Where did it come from, if it did not come from damaged wheat?

Next place, Mr. Edward Braidy, of the tenth concession of Maryborough, some years ago sowed a field of fall wheat on low land. It got frozen out badly. What was the result? It was ten bushels of chess to one of wheat.

Third and lastly, right here in Dorchester, my neighbour, Mr. McGregor, some years ago sowed a field of spring wheat in front of his house, about one acre, but he had not seed enough to finish, and completed sowing the field with fall wheat. It was a piece about thirty feet wide, by one hundred feet long. It came up all right, but it all turned red in the summer. The spring wheat was a fine crop. He seeded it down to grass. I said to him one day, "Where is the fall wheat you sowed?" "Why, it is there," he said, "but it don't grow." The next summer I was out there just before haying, and went through the field. The part sowed to fall wheat was all chess, except one small bunch that had three heads of wheat. Where did the wheat go to, if it did not turn to chess?

Can prove this; if you think not, write H. G. McGregor, Belmont, Ont., and he will tell you the same story. Chess is nothing more than damaged wheat. Some years it is worse than others.

Yours truly, JOHN HOLBORN, Belmont, Ont.

ANSWERED BY JAMES FLETCHER, ENTOMOLOGIST AND BOTANIST, DEPARTMENT OF AGRICULTURE, OTTAWA.

In reply to Mr. Holborn's letter, with regard to chess, I can only answer his positive statement "that wheat will turn to chess," by referring him to my last annual report, page 165. The examples which he gives to prove his contention, to my mind prove nothing. I shall be glad to send him, if he wishes it, seeds of chess to experiment with. He probably has fall wheat seed, and if he will pick out one hundred grains and sow them this fall, and mark each grain where and when sowed, he will find none will produce chess. I have only to repeat that if clean seed be sowed, no chess will result. I do not think it worth while to take up more of your space with this matter, but shall be pleased to correspond at any length with Mr. Holborn, and also to try any experiments he may suggest.

Wheat Shrinkage.

According to the Ohio Experiment Station, in a test made with stored wheat it was found that when grain is threshed dry from the field the loss in weight by storage is only 2 1/2 per cent. on the average. The last weighing was made when the grain had been in the bins three years. Another experiment proved that condition of weather affects weight of stored grain. Twenty bags of dry wheat were put in a bin in January, 1892, and left through the extraordinarily wet spring and early summer that followed, being re-weighed in July. It was found that the aggregate weight of the 20 bags was a few pounds greater than when stored.

Notes from England.

After one of the driest springs since the beginning of the century, the parched fields and pastures have been refreshed by a more or less copious rainfall. The first cut of meadow hay may be said to be entirely destroyed, but a good single cut, which will not be ready much before the second crop usually is, may be obtained. The rain has come too late to insure a good crop of clover, though the bulk of the crop will be considerably increased.

We must hope for a good aftermath, which can be made into hay or silage—the former from choice, as "hay will be hay" this season. Prices have advanced and are likely to go much higher, so that there will doubtless be a considerable profit made by exporters in sending bailed hay to this country.

The British Board of Agriculture have published the agricultural produce statistics of Great Britain for the past year. We notice that with the exception of oats and turnips the estimated total produce of every crop has fallen below the estimate for 1891. Hay is only estimated at 11,500,000 tons while even the bad year of 1891 the yield exceeded 12,500,000 tons. This reduction is due partly to the unfavorable weather, and also to the serious damage by blights, mildews and rusts.

The farmers and stock owners have presented a petition to the salemasters of Scotland, showing that the selling of cattle and other live stock by weight is the fairest method, and urging its adoption upon the dealers. They also ask for a sworn weigher to be appointed at each market, and that the weight be marked on a blackboard which will be visible to the buyers and sellers during the bidding.

A very serious outbreak of cattle plague has occurred over the Russian Steppes, stretching as far as the Caucasus. Regulations have been issued for the compulsory slaughter of diseased animals, and also of all animals in contact with those diseased. Owners will receive compensation for all animals killed.

Readers of English papers on your side of the Atlantic will regret to hear of the death of the Rev. Geo. Gilbert. He was a well-known contributor to a number of our agricultural papers.

Since the introduction of Indian rubber tires on the wheels of hansom cabs, on the streets of London, there have been so many accidents to pedestrians that the police have refused to license any cabs of this description unless they have bells attached to the harness or some part of the cab to give notice of their approach to the unwary foot-passenger.

The result of an experiment made by Dr. Royer upon the influence of sugar in the constitution of butter, by the addition of sugar in a ration of dairy cows, is found to be that it lowers the point of fusion of the butter. The action of the sugar is equally felt at the point of fusion of the fixed fatty fluids.

At a meeting of French agriculturists during the late Paris Cattle Show, a paper was read on animal tuberculosis, in which the statement was made that ten per cent. of the cattle suffered from this disease. They have a sure method of diagnosing tuberculosis even at its inception, by the employment of tuberculin. When injected into animals suffering from this disease it immediately raises the temperature of animals which had previously showed no signs of the disease. By this means the healthy animals could be separated from the diseased. A number of breeders have already tried this method, and report satisfactory results.

It will be interesting to many to learn how things were managed in the good old times. 1607 was a year of great depression, and many farmers were ruined. Whereupon Her Most Gracious Majesty Queen Bess did make an ordinance respecting the London companies who dealt with farm produce. And Billingsley, Lord Mayor of London, thus proclaimed on April 19th, in the 29th year of Elizabeth:—Item, this daye, accordyng to Her Majesty's commandment, signified to my Lord Mayor by the letters of the Right Honorable the Lords of H. M. Privy Council, purporting that during this summer season, in respecte of the presente scarcity and dearth all the severall companys of this city do from hensforth forbear to make any feasts in their halls or elsewhere for the avoiding of consumption of vituals; and that one half of the charge—intended to be spent in such feasts—shall be paid in money, by such persons as are to be at charge, to ye handes of Thomas Ward and Richard Wright, collectors. And the same moneys so collected shall be from tyme to tyme employed by them toward the relief of ye pore." That is a livelier method of helping distressed agriculture than is the appointing a Royal Commission.

An interesting example of electricity as applied to farm work has been in operation for some time at Ardwell, Wigtonshire. The whole of the usual farm machinery—such as threshing, sawing, corn-crushing, and the like—is here driven by an electric motor. The electricity is generated by water-power, the turbine wheel which drives the dynamo being about a thousand yards from the farm. The electric current is conveyed by wires to the house and farm, in each of which a storage battery is placed. These supply the electric current for lighting and motive purposes when the machinery is not working. The whole of the mansion-house is lit with the electric light, and an electric motor is provided for pumping water for domestic purposes.

At the farm, which is also lit throughout with the electric light, there is a larger electric motor of 16 horse-power which is arranged to drive the farm machinery. This it does quite easily. This motor runs remarkably smoothly and quietly, and requires no governor, as the speed does not vary whatever the load may be. This is especially noticeable when sawing, the power required for which is constantly altering. Another feature of interest is ease and quickness in starting. There is no waiting to get up steam, as the motor is at once started by moving over the switch handle. There are many places in Scotland where water-power now running to waste could be utilised in a similar manner. When the distance is great it would be advisable to run the wires on poles overhead. The above work has been carried out by Mr. R. Frederick Yorke, A. I. E. E., electrical engineer, of Glasgow, under the instructions of Sir Mark Stewart, Bart., of Southwick, M. P.

The West Ross Farmers' Club has been deliberating on a scheme for the relief of old age, and passed a resolution declaring that everyone who has reached the age of 65 should have a pension five shillings a week.

Some time ago the Board of Railway Managers of this country withdrew all free passes for herdsmen and others in charge of live stock. A strong deputation of farmers and members of the leading agricultural societies laid the matter before the managers, showing that this act would prevent the exhibition of stock at the shows. The result of this consultation was that the board with becoming grace abandoned their position, and we hope that the right of men in charge of stock to passes will never again be questioned.

Large quantities of potatoes are leaving the Clyde for America, two steamers recently leaving with 944 tons, valued at £320.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

ANSWERED BY DR. MOLE, M. R. C. V. S., TORONTO.

BRONCHITIS AND SCAB IN SHEEP.

SAMUEL MACNIDER, Little Metz, Quebec:—"Our sheep are troubled with a discharge from the nostrils which goes down their mouths and causes them so much coughing as to nearly choke them. They also kept pulling their wool out during the last winter, and, on examination, we find the skin covered with a yellow, scurvy-like scab. Please state what the diseases are and prescribe for them."

Your sheep are suffering from a severe attack of bronchitis, due to the cold, wet spring combined with exposure, the increased secretion of mucus collecting in the bronchial tubes causing the distressed breathing. Treatment consists in removing the animals to a covered shed, where you have security from the chilly nights and cold draughts. If the patients are inclined to feed, you must be very cautious and feed sparingly; apply some stimulating liniment to the sides of chest, and give a teaspoonful of sweet spirits of nitre and whiskey in gruel; also allow some powdered nitre in the water to drink. Should these instructions be carried out, in most cases you may look forward to recovery in about a fortnight. Scab in sheep corresponds in every way to mange in dogs, horses, cattle, etc. Separate healthy from diseased animals, and employ some dipping mixture. There are so many that it would be unfair to offer any opinion respecting them; my experience favors "Little's Sheep Dip and Cattle Wash", used according to directions; but must not be used whilst the animals are unwell.

BARRENESS IN MARES.

ALBERT SALMON, Thorndale P. O., Ont.:—"I am a breeder of thoroughbred Suffolk horses, and have a young mare rising six years old. I started to breed her at four years old, and she missed. I tried her again last season to two different horses, and still she missed. I would be glad if you can give me some advice to get her in foal, as she is a valuable mare."

This is not uncommon in thoroughbred stock. For some reason (nature has not given any good explanation), as soon as you develop extra quality, the mares will not breed or the males are impotent. In some cases some trifling change of the mode of life, feeding, working, or the water will be the cause. In others a too lax condition of the Os uteri, or a too rigid one, will be the cause in a maiden mare. It may be due to a want of tone in the system. I would advise that you give some good nourishing diet, a dose of laxative medicine, and then a dose of uterine stimulant, which may be procured from any veterinary surgeon. Also at the time of covering use one of Lyford's impregnators, which have been successful in our land.

ANSWERED BY W. A. DUNBAR, V. S., WINNIPEG.

DEFORMED FOAL.

THOS. COPELAND, Saskatoon:—"I have a colt, fourteen days old, that is lame from birth in the left hind leg. At first it could not stand, and had to be held up to suck, but in two days it was able to rise and suck alone, although it scarcely used the left hind leg. It is in good condition and thriving well in every way, excepting that leg, which does not improve satisfactorily. When foaled, both hind legs were bent, the right outward and the left

inward, and the latter was not then, and is not now, so well developed as the former. The left leg appeared to be more bent inward than the right was outward. The right side is now pretty well straightened up, and the left side is not so bad as it was. I have been under the impression that the hip was dislocated. Is that likely? In short, can I do anything for the colt without the aid of a veterinary surgeon, as we are so far from one that it would not pay to bring him for the whole value of the colt?"

The deformity of the colt is doubtless due to its abnormal position in the womb. We have seen several similar cases, and in each of them the deformity entirely disappeared by the time the colt was three months old. Medical treatment or surgical appliances of any kind are useless. Leave the case altogether to nature, and we think that a satisfactory cure will be the result. The hip joint is not dislocated.

LAME OX.

ESTEVAN, Assa.:—"Kindly answer, through the ADVOCATE, the following question: While plowing last fall my ox appeared to step on something and could not bear to put his foot to the ground; he then seemed to get better, putting his foot down with an effort and pointing the toe on the floor, but, as time wore on, that hip (high side) became considerably thinner than the other. He eats and works well; is still lame, but, if worked rapidly, loses lameness for a short time. What is the trouble and the cure?"

The shrinking of the muscles of the hip does not necessarily indicate that the seat of lameness is in that region, as that condition would likely occur even if the trouble was in the foot, or in some other remote part of the limb. Examine well the *stifle*, compare it with the other one, and if you can detect any difference, you may apply the following blister: Bichloride of mercury and cantharides, of each two drachms; vaseline or lard, three ounces; rub into the part well with the fingers; let it remain for forty-eight hours; wash off, and apply lard to the blistered surface. Give the animal rest.

Miscellaneous.

DANDELION AND OX-EYE DAISIES.

C. B. MAYNE:—"Kindly inform me if dandelions and daisies are an indication of poor land. What should be done to eradicate them?"

These plants are not an indication of poor land. If they once get a foothold they are equally as bad on good land. We have never known the dandelion to give trouble in cultivated fields, or in meadows that are cut for hay. They are often troublesome in lawns and old pastures. Either break up the sod or take one or two crops of hay, which will usually smother them out. If only a few are present the spud may be used.

The ox-eye daisy is, however, a much more difficult plant to deal with, and is one of our worst weeds. We might almost say that it is the worst to get into pastures and meadows. It is a perennial with stems from one to two feet high, but when cut repeatedly it will flower within a few inches of the ground. If there are only a few over the fields carefully about the time they blossom, and pull, being sure to get all the roots. Do not neglect fence corners and waste places. A bare fallow or hoed crop with careful picking the following year will often be quite successful in destroying them, but if the land is badly infested it will be necessary the second year to plow in one or two crops of buckwheat, or grow a crop of green feed, such as rye or millet. The third year plant rape, corn or turnips. If these crops are thoroughly cultivated the daisy will be entirely destroyed.

LEGAL QUESTIONS AND ANSWERS.

[Answers to legal questions of subscribers, by a practicing barrister and solicitor, are published for our subscribers free.]

LINE FENCE.

In 1890 A and B rented a quarter section from C, which was fenced on three sides, but only partly fenced on the fourth side, adjoining land owned by D. D refuses to build his share of the line fence, but makes use of the part already built by C, and wishes A and B to keep it in repair; this they do. Still D puts his dog on A and B's cattle, which is liable to cause them great damage. There was nothing regarding this matter in the lease between A and B and C. Now, is D liable for damage done the cattle by his dog? And who has to put up the line fence, A and B or C or D?"

PORTAGE LA PRAIRIE.

[In the first place, A and B must certainly not allow their cattle to stray on to D's land. If they do, D has a right to chase them off, using a dog for the purpose if he chooses. In the next place, D's dog must not chase the cattle when they are not on D's land, and if the dog does so D would be liable for any damages done. In the next place, as to the line fence, C, as the owner of the land, has a right to build the line fence, and can compel D, as the owner of the adjoining land, to pay a proportion of the value of the line fence.]

DISPOSAL OF GOODS.

What is the penalty for disposing of goods held under chattel mortgage?

[There is no special penalty. It is generally provided in the mortgage, however, that if the mortgagor sells the goods the whole mortgage money shall at once become due and payable. Before saying what might be the penalty in any particular case, it would be necessary to see the mortgage.]

GARDEN AND ORCHARD.

Horticultural Notes.

BY W. W. HILBORN, LEAMINGTON, ONT.

See that your grape vines are tied so that the wind will not break down the new growth.

Strawberries planted this spring should have all the blossoms cut off, the first runners should also be cut off. When the plant becomes strong enough to send out three or four runners at once they may be allowed to remain.

The new Raspberry and Blackberry canes should be pinched back the last of this month, or when they have grown to the height of two or two and a-half feet. This will cause them to throw out laterals; hence can produce more fruit, and are not so apt to be killed back by the winter, as they are nearer to the earth. They will not require any more pruning until next spring, except that the old wood should be cut out as soon as the crop of fruit has been taken off. In localities where the snow falls to a great depth it is often advisable to allow the old wood to remain until spring to help support the new canes.

To plant out a new plantation of Red Raspberries, if you can procure plants near by, there is no better time than when the new growth or young plants are about a foot high; transplant on a damp or cloudy day, pinch out the top, and you will get a larger growth than from plants put out in early spring.

CULTIVATION OF THE SOIL.

Perhaps no branch of farm work is less perfectly understood than the cultivation of the soil. Every one knows that corn, potatoes and all other vegetables grow better when well cultivated; why the soil should be cultivated, when it should be cultivated, how deep and how often it should be worked to give the best results, are of the greatest importance. To answer these questions we must first consider what we cultivate for. Analysis shows that about eighty per cent. at least of the composition of vegetables is water. We must, therefore, try to supply the required amount of moisture during the dry, hot weather, otherwise our crops will not succeed. This may be done best by frequent cultivation; the soil may also be dried out by cultivation. It is, therefore, necessary to know just how to proceed to gain the end in view. Cultivation causes moisture to be retained in the soil:—First, when the soil becomes firm with the spring rains or from any other cause, the moisture is brought up to the surface by small capillary tubes which are formed in the soil, and evaporates it very rapidly. By stirring the soil those little capillary tubes are broken off that have been continually pumping the water to the surface for evaporation, and prevents the moisture from raising farther than to the point where the cultivator has stirred the soil and made it so porous that the little particles of water cannot follow to the surface, hence are retained in the soil just at the point where it can do most good to the growing plants.

Another and very important reason why cultivation produces moisture is that by stirring the soil it is cooled off considerably, and thus causes the dew, which falls at night to be deposited down in the earth, while soil that has not been stirred is not much if any cooler than the surrounding atmosphere, hence does not attract the dew.

It is quite a common belief that cultivation is only to kill weeds. That may be so during a wet season. But cultivation to retain and produce moisture is the first consideration, as most every season when vegetables and small fruits should be making their most vigorous growth we are apt to have dry, hot weather. At this time the cultivator should be kept going over the plantation twice a week, and three times would be better. If this is done, sufficient moisture will be produced during the driest weather to keep plants growing vigorously.

If, however, cultivation has been deferred during dry, hot weather until the soil is dry down to the depth of several inches, then cultivate quite deep, wait a week and cultivate a little deeper, and you can dry the soil out as dry as an ash heap. On the other hand, you may cultivate two inches or less in depth, and do so often, and you can keep the soil moist to within one or two inches of the surface during the driest seasons we ever have, and there will be little difficulty with weeds.

After every rain it is very important to cultivate as soon as the soil is dry enough to work. If left a day or two too long evaporation is very rapid, as capillary tubes have again been formed to the surface of the soil by the rain compacting it or forming a crust; this should be broken as soon as it can be done without causing the soil to bake or become hard by stirring.

Cultivation should always be done to about the same depth to avoid disturbing the little rootlets that are continually forming in the soil, and these will come as near the surface as they are allowed, for it is there they can get the best supply of food suited to their requirements; hence the necessity of shallow cultivation to obtain the best results. There may be some exceptions to this method of shallow cultivation, but they are few in this province of Ontario.

Fruit Farming on Clay Soil.

[Read before the last meeting of the Ontario Fruit Growers' Association by T. G. H. Patterson.]

For a long time it was supposed, at all events in the section of the country in which I am situated, that fruit would not succeed except upon a light soil, preferably a sandy one, consequently those who had the temerity to plant fruit on clay were laughed at by their neighbors as being likely to have nothing but their labor. Even now the same impression prevails largely, especially among those who own farms of sandy texture; to aid, then, in dispelling this idea is one of the objects of this paper. From a personal experience in the heart of one of the best known fruit sections of Ontario extending over eight years, and from observations of the operations of others over a longer period, I have come to a conclusion slightly different from the foregoing, and I ask permission to present the other side of the case. Now, in my experience clay soil, and especially high red clay, is peculiarly well adapted to growing profitably the following kinds of fruit, namely:—Grapes, pears, plums, apples, quinces, red and black currants. Peaches and cherries will also do fairly well; the former must, however, be given exceptionally good attention and cultivation, when they will bear fruit some seasons when there is little or none on the sand, and the quality will be very fine. Still for profit clay does not compare with sand in the case of the peach, which naturally loves a light, warm soil. Small fruits also, with the exception of red and black currants, cannot be profitably grown upon clay to any great extent, although an excellent supply for home use can be easily obtained; but let us examine into those fruits I have already said can be profitably grown there. To begin with grapes, for them I claim the following advantages on clay soil: 1st. Earliness. On the high red clay most varieties will ripen from ten days to three weeks earlier than on sand in the same locality. This is of great importance from a pecuniary point of view, especially in an early section, frequently from this cause alone doubling the profit to be obtained from the vineyard. 2nd. Healthiness. Grapes on clay are not nearly so subject to diseases, especially of rot and mildew. 3rd. The quality of the fruit is vastly superior; so much is this the case that the same fruit grown on clay is like a totally different and superior variety compared to that grown on sand, although the name be the same. To give you an example from my own experience, which is the more valuable as it was purely voluntary and quite unbiased, a year or more ago a young friend of mine who had been staying with me a considerable time, and had been accustomed to eat my grapes grown upon clay soil, expressed a wish to go through some of the large vineyards in my neighborhood upon the sand. It was a fine day in the early part of October, and as we walked through the vineyards the grapes hung in tempting clusters perfectly ripe. Naturally enough he sampled them as he went along, but after doing so his face did not express the satisfaction one might have looked for under the circumstances. Instead of which he said: "Whatever is the matter with these grapes, they have no flavor?" I suggested it might be the variety, so he tried other varieties, but with the same results—no flavor. It was quite true, for I have no hesitation in saying that grapes grown upon sand are insipid, watery, flavorless productions, and are as much inferior to those grown upon clay as those grown out of doors are inferior to the hot house varieties in a cool climate. I am informed by a neighbor who is in the habit of attending the Hamilton market that the dealers and buyers there eagerly seek for grapes grown on clay soil, the effect of which is it is hard to find them grown upon any other soil, at all events when they have reached market. I am also informed that wine makers at Hamilton and St. Catharines vastly prefer grapes from clay, indeed will not purchase any others if they can help it. Now we come to pears, and here again the quality and flavor are much superior, some varieties almost favorless on sand being excellent on clay, that is Flemish Beauty; Clapp's Favorite, too, which rots at the core if allowed to hang on the tree on sandy soil, will hang for weeks upon the clay without suffering deterioration. Trees are healthier, bear as well, and are much less subject to blight, that fell enemy of the pear grower. Plums revel in clay soil. They bear early, last long and produce abundant crops of excellent quality, often bearing heavily in seasons when there are none upon the sand. They are also less subject to disease and to the curculio. Apples do excellently on high clay. They come into bearing early and do not feel climatic changes as much as on the sand. The fruit is of finer quality and keeps better, the trees as a rule bear more fruit and less wood, and do not require so much feeding. Quinces will do well on clay if given good cultivation and a moderate supply of manure; also red and black currants.

Yet two other points in favor of high clay, and I have done. 1st. It does not require under-draining to produce fruit profitably of excellent quality. This is frequently a very important item in the expense of putting out fruit. One of our prominent members declared at a meeting of the farmers' institute held at Grimsby last winter that it was quite useless to under-drain high red clay. While not going so far as this, I am of the opinion that it will make so little difference as to be not worth doing. 2nd. The fertility of the clay for fruit is not easily exhausted, and can be kept up for an indefinite period with a very moderate supply of manure. Now, on sand it is feed, feed, feed, all the time if you wish to obtain the two Q's, viz., quantity and quality, and I am convinced the reason a great many orchards do not bear upon the sand is from no other cause but soil exhaustion. Now, the clay, like the Scotchman of whom it was said on some one asking if he kept the Sabbath, "Yes, he keeps the Sabbath and everything else he can lay his hand on," will retain the fertility you apply to it, and will unlock it gradually. Summing up, we may firstly say that the fruits I have mentioned, viz., grapes, pears, plums, apples, quinces, red and black currants, cannot only be profitably grown on clay, but will excel those grown upon almost any other soil.

POULTRY.

Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

I was lately asked whether I would ever be "written out" on this poultry subject. Well, anyone who interestedly cares for a real, live, wide-awake flock, like mine, will find experience piling up every day faster than pen can tell. Then, too, experience begets observation. Those who have been "through the mill" and found our poultry business requires so much skill, science and patience, can never after get enough of observing how other poulterers are doing and coming out. When I was a little girl, I heard a showman at the door of his place say over and over, "This will go right on merrily all the time." So, whether merrily or not, poultry culture and poultry love do go right on. Our Ex-Secretary of Agriculture, Mr. Rusk, said in one of his later reports, the poultry industry could no longer be ignored, since it had risen from insignificance to national extent and importance. We have now reached a sort of yearly "round up." Probably our chicks are all hatched, and discoursing as follows:—

"It's wonderful," said a chick.
 "That a small shell, not very thick.
 Held me, I'm such a big bird.
 No doubt it's untrue. Pooh! Absurd!
 That shell, 'twas none the less true.
 Once held that chick, the old hen knew,
 Who did her young one advise,
 The day of small things not to despise."

Sustaining the vitality and growth of our chickens, sorting out and selling surplus cockerels and fat hens, clearing up premises for the autumn and winter campaign, is now our work. Keep the grass run well-mowed, for it is thus tenderer eating and does not bedraggle chicks. My "bump" of caution prompts a word on the careful use of eyes and scythe. I have known a cat's leg nearly severed and of several narrow escapes by hens. Farm poultry ought to have the blessings of a large run. Plant a little more garden, allowing enough corn and tomatoes for both yourselves and fowls. We have always done so, and get sufficient garden stuff to bestow even on those who shut up their hens. For when brought up, from the first, around a garden, biddy is less likely to do damage than when allowed in only now and then, or getting there by chance, reminding us of the half-starved boy at a picnic. Biddy's main aim is extermination of bugs, and her injury to plants chiefly accidental and incidental. We thought our hens disposed of the currant worms and preserved some of the bushes alive without other remedy. An acquaintance tried, by dissecting a number of sick chickens, to learn the cause of some mysterious malady visiting her flock, and was surprised at the large number of familiar insects found in the crops even of those partially disabled individuals. Other poulterers take an opposite course from strict confinement, and think when grass grows well and chicks are a few weeks old, their whole flock can entirely shift for itself. I go, breakfast in hand, to unlock my houses mornings and feed my fowls before they scatter, thus preventing many from plunging into a wet bath, as hungry birds do, among rank, dewy weeds and grass. Supper served at the hen-house also calls fowls earlier out of the chilling night dew. If cockerels ready for early sale before the market is glutted and prices fall, if hens fit for the table without special fattening, and if precocious pullets are desired, all three classes must be well kept up. I had to stop writing at this point and make my remarks practical by washing and boiling a kettle of potatoes, what I had already provided having gone away faster than the morning dew. Potatoes are a little clogging, and not so good, of course, for very young chicks as for those half-grown and older. A ten-cent vegetable brush, or even a scrubbing one, hastens the work of preparation. When potatoes are cheap, I take larger ones, as they are easier washed and more wholesome, but if dear, small specimens do very well. I also continue my onion chopping quite into the summer, since some

doctors rank raw onions among the best liver medicines going. An old saying is, "You can't eat your cake and have it too," but onions are different, and a lady who relishes my eggs very much said to me lately, "I am so glad you don't feed your hens onions." I told her I did and must provide them for the health of the fowls, but that I added so many other flavors, and seldom fed any strong thing two days running, that my patrons detected onions in neither flesh nor eggs. My "Dutch Cheese" is not rosy, but crumbly, and best when made slowly. I have an asbestos or "augite" stove-mat, on which I set a pan of clabber that then cooks without attention, and is turned into a pan perforated like a skimmer, for draining off the whey. Though we have grass, sunshine and fresh air now, bowel trouble is more frequent than in winter's nipping air, which kills every germ and vile thing. If bowel complaint comes, a little alum or lime in their drinking water, two or three days, will restore the sufferers. If you cannot guess how strong to make the solution, taste of it once or twice, as I have done. If you undertake to doctor a whole flock through their drinking water, every pool in the vicinity must be medicated, too, or covered. A reduced amount of pudding, and powdered charcoal in it, are good remedies. By the way, you can get a firmer hold of a large, round, wooden stirrer than of a spoon handle, and thus mix puddings easier. Corn is so cheap and handy, people often ask why they cannot feed it freely, as our forefathers did. They could if the modern hen had as much exercise and as few demands upon her, and it is true to-day that our farm fowls stand more corn than confined, artificially-raised birds can. If hens get over-fat, reduce their grain ration of every kind, or they become lousy, not being active enough to rid themselves of pests; their feathers grow scanty on rear and breast, where the fat is thickest and body hottest, and occasional clots of blood in their eggs show some of the little internal blood vessels are probably breaking under such pressure. Before chickens come into market, the surplus of fat hens can be sold well without special fattening in a close, dark place, and cockerels, if sold or separated early from the pullets, need not undergo caponizing. The same butcher who took my fowls last year came to ask for them this year, and said he had never found a poor one among them. The home market always has room for the best.

As people become experienced, the wider they see the field of knowledge opening before them. Such realize that neither themselves nor others know and have tried everything. They "prove all things and hold fast that which is good." Comparison of experiences in their farm paper or an exclusive poultry paper, or suggestions from any kindly, courteous source, are welcome and helpful to them. A recent poultry paper contained a plaint from a person who, having read so much in it about oatmeal, had fed little chicks first and entirely on coarse, unhulled, domestic-ground oats, till many died. Although writers should be both accurate and explicit, I long ago studied out that table oatmeal was intended. So it would be difficult to recommend a faultless writer or a paper which had left nothing unsaid. I am reminded of that story about a small church that desired a learned, humble, brilliant, careful, and, in short, perfect minister. Their presiding elder wrote back they had better call good old Dr. Smith down from heaven, as there were none such on earth.

I have been weighing eggs, which is a rather interesting, profitable investigation, since those of the same size vary in density. I have heard those old enough to remember the ancient hen say our modern biddy is meatier and her eggs heavier, developed thus by continuous attention in feeding and breeding, a progress desirable when both poultry and eggs are sold by the pound, instead of by the fowl or the dozen. Probably many readers have noticed how much substance Plymouth Rock eggs give custards and cakes. An acquaintance told me she had customers who gave two cents a dozen more for them than for White Leghorn eggs. I have had buyers who much preferred the Plymouth Rocks at the same price, and many grocers sort their eggs into dark and light lots. Leghorn fowls compensate, I think, for any deficiency in matter by laying more eggs in number. This may be given as a sort of general rule, with exceptions, of course, that the more eggs a hen lays the less substance and vitality each egg can have. My hens are kept laying for all that is in them, since egg-production is my department, but I do not claim large hatches. An average of a little over seven chicks to a setting has been an almost yearly result, over one-half of which are cockerels in early broods. Later hatches usually give more pullets. Eggs where less of a forcing process is employed probably yield a larger number of chicks, but can hardly produce better layers in turn. I have learned not to be faithless concerning any setting, however much appearances may be against hope. One such this year—an exception, I am happy to say—was thrice left till cool, and placed under three successive hens in two different houses, but finally yielded five fine chicks, after searching so long for a suitable mother and a spot for the soles of their feet. So, those high-priced eggs we buy ought to stand some banging by the expressman and do fairly at last. I am quite satisfied with my choice of pullets for setters and mothers. Josh Billings says, "When yer don't know what ter-dew, don't dew it." A pullet proceeds on his plan. She moves about less and treads on fewer. An old bird is all a-fire to show those chicks she knows a

thing or two, particularly those fine scratching places found last year, but usually runs with her brood a longer time, simply because she has less call to lay.

When patience and perseverance have done their best work on our birds, some may still "loaf around," as it were, idle and indifferent, yielding no eggs at all, neither large nor small. How shall we certainly know our paying hens? A good layer is always a well, lively hen, and a well, lively hen is usually a layer. The brightest combed, most self-helpful, independent, happy fowl, the strongest scratcher and loudest singer, usually produces eggs in proportion. Her musical lay seems particularly connected with that other kind of lay. Many hens lay characteristic eggs, that is, each one's eggs have a shape differing slightly from others. Frequent visits to poultry quarters will connect the hen, her nest and her product. By watching and catching biddy in the act, our best layers can be determined, and their eggs set to produce a laying strain.

The gathering and care of eggs, if there are any to gather, demand considerable attention. Several layers will successively choose one favorite nest, thereby continually reheating the first egg laid therein that day, which egg may also be the very one left over night, if artificial nest eggs are not used. It is said a fertile egg starts into life when raised to a temperature of 92°. Should this process begin and stop a few times, the embryo of the chick dies and decay follows. Some, therefore, recommend non-fertilization. But one year I sacrificed every chancier, and hawks almost immediately discovered my feathered watchmen and detectives were gone. They could, for once, surprise and taste spring chicken. My uneasy hens also seemed to miss their advisers and peacemakers. The New York Experimental Station once decided that fertilized eggs keep as long as unfertilized, provided the former are never started into life. Gather your eggs often, whenever at poultry quarters bringing in what there are, then keep in a place of suitable temperature, and neither frozen eggs in winter, nor "chicks on the half shell" in summer, will be your reward. No egg testers will be required, and your fowls, like mine, can hardly get a chance to learn the vice of egg-eating, especially if, in addition, every egg-shell thrown out is first crushed out of all likeness to its former self. Any nest which shows traces of a breakage better be temporarily closed, and beginners will not know they can go elsewhere to do their wicked deed.

APIARY.

The Apiary.

CONDUCTED BY MR. ALLEN PRINGLE.

Will you please give a beginner instructions in the ADVOCATE how to get section-box honey. Last year was my first with patent hives and sections, but the bees would not work much in the sections for me. How would you recommend me to manage them?

WELLINGTON CO., ONT.

ANSWER.—It is not always that the old heads or experts can get the bees to work in the sections, let alone the novice. There may be various reasons why the bees do not see fit to accede to the wishes of the bee-keeper and respond to his efforts to get them into the sections and to work there.

In the first place, if they have plenty of room for storing the honey elsewhere, they are not apt to go into the sections to store it. When they begin to get crowded below they go up into the sections. In the second place, to get section honey freely and of good quality, the flowers must be yielding liberally—in other words, there must be a good "flow". In the third place, if the brood chamber is unduly large, with a large quantity of honey stored in it, although it may be full of honey and brood and the bees crowded for room, they are not so apt to begin work above as though the honey were scarce below, though the crowded state may be the same in both cases. This is quite reasonable as well as natural, for you could hardly expect bees, any more than bipeds, to unduly exert themselves to get more in the presence of abundance on hand.

Of course, some bees will do it, the same as some bipeds are never satisfied no matter how much they have. The bee is an animal of both instinct and reason, and bees differ from each other like people, though perhaps not so much. At any rate some of them can hardly be bribed, bamboozled, cajoled or coerced into the sections. The way I manage such is, I let them stay out, and make them work in another fashion more to their liking; you must treat a mule as a mule. To sum up, the *how* to do it is this: Keep only good queens; have a brood chamber of moderate size, preventing the undue accumulation of honey in it by using the extractor on it if necessary, and don't expect the bees to enter into and fill sections when they are unable to get honey freely in the fields. And if you find they will not go for the sections with all these conditions favorable, you may put it down to constitutional "cussedness," and act accordingly. Take the sections off and put on a top story with frames of empty comb (if you have them) for extracted honey, and keep the extractor going on them to spite them.

Transferring.

In the directions which Mr. Pringle gives to a subscriber in relation to transferring his bees, in issue of 15th of May, he recommends him not to do so until twenty-one or twenty-two days after they have swarmed. It is true that all the young workers will have hatched out by that time, but a number of young queens will also have hatched, which, in all probability, will have led off another swarm or two before then, with considerable loss to the owner if he is not very vigilant. Better transfer immediately after they swarm, cutting out all queen cells but one; then, having but one queen, they cannot swarm and are not likely to for balance of season, which is what "Subscriber" wants if his object is to obtain surplus honey. But there are other objections to the method recommended by Mr. Pringle. Bees do not swarm until the comb is well filled with honey, and honey presents a much greater obstacle to transferring than brood. Unless colonies are extra strong, the spring favorable, and the fruit blossom yields a liberal supply of honey, they will not swarm before the white clover season arrives, in the middle or latter part of June; add twenty-one days, and this will carry us well into July, into the most busy part of the honey season,—at the very time when the comb is loaded with honey, for as fast as the brood hatches, the bees fill the cells with honey, so that oftentimes the young queen has scarcely room to lay an egg. Besides, if "Subscriber" invests in improved hives, why should he not have the benefit of them for the whole season? When is the best time to transfer? 1st. It is desirable that it should be done before the honey season commences, so that the bees may be ready to store the honey where it is wanted. 2nd. At that time when the comb contains the least honey. 3rd. When the weather is so warm that the brood will not get chilled during the operation. 4th. It is desirable, also, that they should be gathering some honey at the time, so that they may not be disposed to rob, otherwise the work will have to be done under a bee tent, or in some close building that will exclude the bees. They work more energetically, too, in fastening the comb in the frames when there is honey coming in. Now, when are these conditions to be found? Just when the apple trees are commencing to blossom, and if not attended to then, the next most favorable season will be when the bees are commencing to gather from the white clover. G. W. FERGUSON.

DAIRY.

The Importance of Attention to the Little Things in Dairying.

BY J. W. WHEATON, SECRETARY WESTERN DAIRY-MEN'S ASSOCIATION.

The most successful man in my department of work is the man who looks well after the little things connected with his business. That old proverb: "Look after the pence and the pounds will take care of themselves," is a very apt one, and its logic will apply to nearly every variety of trade and business. Many men pride themselves on the comprehensive knowledge they have of their particular vocation, and theorize as to the best methods of doing certain lines of work, giving their attention to general principles more than to details, and afterwards wonder why the work has not been successful and returned a handsome profit. Many farmers neglect too often the little leaks on the farm and the waste places where the profits are gradually oozing out, and then complain of hard times and the unprofitableness of the business of farming at the present time.

To no other business will this golden rule apply so well as to the business of dairying. The man who provides himself with a dozen good cows, and feels that he is a successful dairyman because he has the machine by which to manufacture milk, will find that his venture will be an utter failure, unless he gives particular attention to the little details in connection with the handling of his cows and the proper care of the milk.

As the subject of dairying is a very wide one, we will confine ourselves in this article to some of the details that the patron should give particular attention to in furnishing milk to a cheese factory.

In the early history of cheesemaking in Canada, there was not much attention given to the care of milk. In fact, the cheesemaker would not return milk received at the factory unless it were thick or very sour. The quality of cheese required to meet the wants of the consumer in Great Britain was not so high as at the present time. Inferior goods could be disposed of quite readily at fairly remunerative prices, and hence the maker was not so particular about the quality of the milk received by him. But that day has gone by, and it is no longer profitable, nor is it possible, to dispose of inferior goods in the British markets, except at a sacrifice, and consequently the manufacturer must turn out a first-class article if he expects to get a first-class price, and in order to do so he must have a pure, sweet quality of milk. A great many patrons complain because their cheese maker is so particular about the flavor of the milk, and because it is returned when it has only a foul odor and is not thick or sour, and a few consider him not so capable as the maker of twenty years ago because he cannot make a first-class article of cheese out of an impure quality of milk. This has never been done, and cannot be done at the present time, for unless a

cheesemaker has good, pure milk, he cannot be expected to manufacture a first-class article of cheese out of it.

We have a fairly comprehensive knowledge of the main principles of cheesemaking, and the only way to still further improve the quality of our Canadian cheese is to give particular attention to the little details both in connection with the process of making, and also in the handling of the cow and the proper care of the milk before it reaches the factory. The little things connected with the care of milk and the handling of the cows are entirely under the control of the patron of the cheese factory, and it is his duty to attend to these little details and to see that only good, pure milk is sent from his farm to his cheese maker.

The first essential in successful dairying is that the cow should have an ample supply of good, succulent food, an abundance of pure, fresh water, and a salt she cares to lick. Then it will always pay to treat the cow as kindly as possible. There is no animal kept on the farm that will repay for kind treatment and best of care as well as the cow. A first-class milch cow has a very fine and delicate nervous system, and if she is abused or handled roughly, this abuse and rough treatment will excite her nervous system and will react on the organs engaged in the elaboration of milk, thereby lessening the quantity and injuring the quality of the milk that she will give. Ex-Gov. Hoard tells of a visit he made some time ago to one of the Southern States to see a celebrated butter cow. When he arrived at the place and enquired if he might see this valuable cow, he was greatly disappointed on being told by the proprietor that he would not take \$1000 and allow a stranger to look upon that cow just then, as she was undergoing an important butter-producing test. The very fact of a stranger looking upon that cow at that time would excite her nerves and react upon the production of milk. This may be considered by many as an extreme case, but nevertheless it is the experience of a man who thoroughly understood the cow and knew what conditions and treatment were calculated to enable her to produce to her utmost capacity. Not long ago, in conversation with a lady in one of the leading dairy districts of Western Ontario, she told me that whenever she supervised the milking, their herd of twenty cows would always give twenty pounds more milk than when her husband looked after the milking. The lady would not allow any talking or any noise in the milking yard when the cows were being milked, while her husband was not so particular about it, and hence the increase in quantity of milk by giving attention to one of these little things.

One of the chief difficulties we have to contend with in our Canadian cheese is bad flavor. In comparison with the best British cheese, it lacks the fine, creamy, rosy flavor that the British cheese has. Now, the best way to overcome this difficulty is to take the best possible care of the milk, and supply only a pure article to the cheesemaker. There is no substance so susceptible to all foul odors and bad flavors as milk is. It seems to be the nature of milk to take in these impurities, if they are around, and milk seems to be a very suitable medium for the growth and development of the varied forms of bacteria that are constantly in the atmosphere, and consequently it is the duty of every patron to protect the milk and prevent these germs from developing in it. It has been found by actual experiment that nearly all the bad flavors and bad odors found in milk get into it after the milk has been taken from the cow. Milk has been taken from cows under such conditions, by sterilizing the milking utensils and preventing the air from coming in contact with it, so that it could be kept perfectly sweet for any length of time. Now, it is not possible for the dairyman to prevent the milk from coming in contact with the atmosphere, but, by giving particular attention to the following, he may be able to prevent so many of these germs from getting into the milk, and to overcome the evil results connected with them:—

1. See that the milking utensils, pails, etc., are in a perfectly clean condition, and that the seams and crevices are not harboring any of these foul germs because of not being properly cleansed and scalded.

2. Observe the strictest cleanliness when milking, and do not allow the dust and dirt from the udder to fall into the milk, but have the udder brushed or washed before beginning to milk. Cows can be milked in a more cleanly manner with dry hands than with wet ones, and just as easily when the habit is formed.

3. Have the same person milk the same cow as much as possible, and milk the cows at the same hour every day. They will become accustomed to this regularity, and will give their milk more readily and will give more of it.

4. Have the milking done in a place where the atmosphere is pure, and do not allow any cesspools, hog troughs, whey tanks, etc., near the milking yard, as the fresh, warm milk will quickly take in the impurities from them if they are around. In many of our factories, during the spring and fall, the cheesemakers have to contend with a disagreeable stable odor in the milk, due to the cows being milked in badly ventilated stables. Now I don't want to be considered as condemning the milking of cows in the stable, for I believe if the stable is properly ventilated and the atmosphere is pure, it is the proper place in which to milk cows, but let the stables be well ventilated and the atmosphere pure.

5. The milk should be strained in every case as soon as it is taken from the cow. Too many patrons neglect this, and think because the milk is strained at the factory, that is all that is necessary. It does not hurt milk to put it through the strainer if it is clean, and if there are any impurities in it, they should be taken out immediately.

6. Do not forget to thoroughly air the milk as soon as it is taken from the cow. This is one of the important things in caring for milk, and whatever else is neglected, do not forget to thoroughly stir and air it. By airing, the animal heat can be taken out, and if the cow has been drinking foul water, the evil results from it will not be so great. A large number of the bad odors in milk are produced by what are known as the alkaline ferments. Now, one peculiarity about these micro-organisms is that they grow better when not exposed to the atmosphere, and consequently airing the milk will put it in a condition to withstand the growth of these germs. Bad flavors in milk prevent the rennet from properly coagulating the milk and not so much curd can be got from it, and also, these bad flavors leave the curd in such a condition that there is more or less loss of butter-fat in the whey, and this may account for the large amount of fat found on many whey tanks, which so many patrons complain about.

7. If the milk has been stirred and aired for fifteen minutes after milking and put in a pure atmosphere to keep over night, and stirred occasionally during the evening, it will not be necessary to cool it to a very low temperature in order to preserve it over night. A temperature of 65 Fahr. will suffice. Do not let cooling take the place of airing.

8. Too much stress cannot be put upon the necessity of having the milk cans thoroughly scalded and cleansed, and especially where the sour whey is returned. The whey should be dumped out as soon as the can is returned from the factory, and the can thoroughly scalded and cleaned with boiling water and put in a place where it will get the benefit of the sun's purifying rays. It is much better not to allow the whey to go back in the cans, but to dispose of it at the factory, as the majority of our best factories are doing.

Too often the care of the milk is neglected because the patron feels that attention to these little details is unnecessary and unimportant, and consequently the quality of the milk is injured and the cheese is inferior. Now, if every patron of a factory would look upon attention to these little details as a necessary part of successful dairying, the work in connection with them would not be so irksome, as in doing it he would feel that he was enhancing the value of the milk and improving the quality of the cheese at his factory.

I am sure every one connected with the dairy business is proud of the present reputation of our Canadian cheese and is anxious to still further improve its quality, so that our cheese will have no competitor in the British market. This can be done by giving particular attention to these little details in connection with the business, and supplying only pure, sweet milk to the cheese factory.

Our Export Butter Trade.

Attention having been recently called in the FARMER'S ADVOCATE to the somewhat disquieting fact that during the past season several thousand packages of butter were reshipped from England to Canada, and recognizing the possible effect that this intelligence might have, we addressed a letter of enquiry to two leading exporters of dairy products, and to Dominion Dairy Commissioner, Mr. J. W. Robertson. Their replies throw considerable light on the subject, and our readers now have the benefit of their suggestions, as contained in the following letters:—

(FROM HODGSON BROS., EXPORTERS).

The FARMER'S ADVOCATE, London, Ontario.

Gentlemen—Your favor of 27th inst. reached us in due course. We believe the main cause for the few lots of creamery butter being returned from England was the extra imports of New Zealand, causing a temporary glut, and our market being much higher it was thought a more remunerative plan. We understand the quality was all right, but finest creamery in Canada then was selling to the home trade at 24 and 25 cts. We are inclined to doubt the rumor that the butter was summer stored goods; we know there were all sorts of reasons given, but we have been assured, on good authority, the butter was fall made choice creamery, and we feel like giving the butter this benefit. Still, as we were not personally interested, and did not see the stuff, our information is therefore only second-hand. The shipping facilities may be better, but we believe most of the steamers leaving our ports are now fitted up with refrigerator accommodation which should carry goods forward in good order. In conclusion, we would say, we fear we are too far distant to ever be able to compete successfully with Danish and other continental butters, as our trade only competes with those from other parts of equal distance, which never arrives fresh. We think a better package, made air tight, might be used to good advantage, and improve the demand, but until such is adopted we think farmers cannot do better than keep up their attention to cheesemaking.—HODGSON BROS., Montreal, May 31st, 1893.

(FROM A. A. AYER & CO., EXPORTERS).

Gentlemen. Replying to your various questions, there was quite a quantity of butter returned to Canada this year, which of course

meant much loss either to the shippers from this side, or to the owners in England. Some portion of it had been in cold storage, and naturally it lost its flavor and became stale. We have repeatedly said that we had grave doubts about the feasibility of winter dairying in Canada, owing to the fact that such large quantities were likely to come forward from Australia and New Zealand, thus supplying the English market after the 1st December, or the close of our navigation here. We consider the shipping facilities as favorable as one could expect for the quantities of butter that are offering during the hot weather, but we have no doubt that the shipping companies would put in refrigerators if large enough quantities were offered; but we have our doubts about the feasibility of shipping large quantities of butter during June and July, as the English markets during that time are so abundantly supplied from Denmark, France, and other portions of the continent. The facts are, that our most useful period for sending butter into England is from the beginning of August to the end of November, or say during four months. It therefore does not become necessary to any great extent to employ cold storage, and we do not advocate either the holding of butter in that way, or the building of large refrigerators for that purpose, as we consider the small ones at present throughout the country and in Montreal are quite sufficient for all the probable requirements for carrying purposes. We would not presume to advise on so important a matter, but our own impressions are that butter makers would do well to go slow, unless they are prepared to take very much less prices than they have been receiving during the last few years. There seems to be no limit to the market for cheese, but the same cannot be said of butter.—Yours truly, A. A. AYER & CO., Montreal, May 29th, 1893.

(FROM PROF. ROBERTSON, DAIRY COMMISSIONER).

Dear Sir,—Your inquiry regarding the return of a quantity of butter from Great Britain to Canada during the past season has been received. The market for any perishable product, like butter, cheese, fruit and poultry, is usually a rather elastic and fluctuating one. Several causes, unusual in their nature and severity of influence upon the market, combined to depress the butter market in Great Britain during the past winter. Prices in the local markets of Canada for both creamery and dairy butter were much better than in England after New Year's. In consequence, it was to the advantage of those who shipped the butter to bring part of it back for sale in this country.

The financial crisis in Australia, and the weakness of the banks there, helped to aggravate the condition of the butter market. The butter which reached England from Australia seemed to be mostly in the hands of the banks, who had advanced large sums upon it before or when it was shipped. The banks had instructed their agents to sell and realize upon the butter promptly upon its arrival, regardless of the outlook of the market, or the probable price which could be obtained. The effect of this was to induce a panicky condition, when buyers became too timid to purchase more than a hand-to-mouth supply.

One of my correspondents wrote to me to this effect:—"When I left England (some time in March), the butter trade was in a most demoralized condition, and it was impossible to tell to five shillings what was the actual value. The Australian banks in London had over-advanced in Australia £150,000 on one week's shipments." I am in no position to vouch for the accuracy of the figures which are given, but the effect of the attitude of the bankers, and the newspaper rumors concerning the enormous quantities of butter to be expected from Australia, had a very "bearish" and depressing influence upon the butter market. The effect upon prices was out of all proportion to the quantity of butter which arrived. The exact and complete returns are not available yet, but I am confident, when they are all in, that we will learn that the shipments from Australia for the whole winter did not aggregate 5 per cent. of the quantity of butter which Great Britain imported during the year. Besides, the Australian Governments were known to be bonusing the butter all the way from two cents to six cents per pound. That put another argument into the hands of the butter buyers with which to hammer down prices. As the retail prices of butter in England were not reported to come down in proportion to the decline in the wholesale markets, perhaps the crafty shopkeeper had a hand in the game. Such an array of unfavorable conditions may never again meet the shipments of finest fall and winter creamery butter from Canada. JAMES W. ROBERTSON, Dairy Commissioner, Ottawa, May 30, 1893.

American Forests.

From statistics presented to the Forestry Congress at Philadelphia it appears that the woodlands of the United States now cover 450,000,000 of acres, or about 26 per cent. of the area. Of this not less than 25,000,000 acres are cut over annually. It was also stated that while the wood growing annually in the United States amounted to 12,000,000,000 of cubic feet, the amount cut annually is just double that enormous quantity, besides a vast amount destroyed by fire, and not included in the estimate. The country's supply is being depleted therefore (says Mr. J. E. Jones) twice as fast as it is being reproduced, which clearly goes to show that a timber famine in America is approaching quite rapidly.

Cost of Milk Production.

An instructive experiment was conducted last year, at the Cornell University Agricultural Station, to determine the cost of milk production and the variation in individual cows. The University herd of twenty cows was used. This herd had been developed, for the most part, from the ordinary stock of the neighborhood by the use of thoroughbred bulls and a rigid selection of the best heifer calves—a system inaugurated by Prof. Roberts in 1875. The year previous to that the average milk yield per cow upon the farm was a trifle over 3,000 lbs., but in 1892 the average was 7,210 lbs., and over 285 lbs. pure butterfat, which, allowing for losses in skimming and churning, would give an average of 332 lbs. per cow of good butter. This is certainly a very striking illustration of what intelligent management will accomplish in improving the milking qualities of a herd, and ought to encourage the efforts of men who are striving to bring their dairy herds as far above that discouraging 3,000-lb. line as possible.

Of the twenty cows in this herd, nine were grade Holsteins, two thoroughbred Holsteins, six grade Jerseys, one thoroughbred Jersey, and two common grade cows bearing evidence of having considerable Shorthorn blood in their veins. Prof. Wing, the author of the bulletins, intimates that the latter were much above the average grade cow in dairy capacity. The milk of all the cows was regularly weighed and tested for butterfat, and everything consumed by the cows was charged against them individually.

During the time they were in pasture the grain ration was made up of three parts bran and one part cottonseed meal. The daily winter ration was as follows:—

FOR THE LARGER COWS.	FOR THE SMALLER COWS.
15 pounds hay.	10 pounds hay.
50 to 55 pounds silage.	40 to 45 pounds silage.
10 pounds roots.	10 pounds roots.
8 pounds grain.	8 pounds grain.

The only exceptions made to this were that Freddie and Puss during January, February and March had ten pounds of grain instead of eight. The summer grain ration was four pounds per cow, except during the month of June, when one-half of the cows received no grain whatever. The cows while dry were fed no grain at all, the remainder of the ration being unchanged. In the latter part of the summer, particularly the months of August and October, the pastures became very short, and were supplemented in August with second growth clover, cut and carried for the cows, and in October with corn stalks. These were in every case weighed and charged to the cows consuming them. In making up the cost of the food consumed the following scale of prices was used, based as far as possible upon the market prices in Ithaca, N. Y.:—

Hay.....	\$ 9 00 per ton.
Ensilage.....	1 75 "
Roots.....	2 00 "
Wheat bran.....	18 00 "
Oats.....	18 00 "
Cottonseed meal.....	35c. per bush.
Cornmeal.....	\$25 00 per ton.
Corn.....	20 00 "
Corn-stalks.....	3 00 "
Grass, cut and carried to cows.....	1 75 "
Pasture, exclusive of grain and silage crops.....	30 cts. per week.

The average cost of food per cow consumed during the year was \$45.25; average cost per 100 lbs. of milk, (2) cents; average cost per lb. of butterfat, 15 cents. The highest cost for any one cow was \$1.48 per 100 lbs. milk by Daisy, a grade Jersey; the lowest, 44 cents, by Pet, a grade Holstein. The highest cost per lb. of butterfat was 27 cents for Glista, a pure-bred Holstein, and the lowest, 11 cents, for Sue, Shorthorn (farrow) grade. From the extensive tables given it appears that the Jerseys and Holsteins are pretty well sandwiched together as to relative rank. The Holsteins, as a rule, are better in the production of milk, both as to amount and cost, and the Jerseys stand better in regard to the production of fat. The two grades at the most food gave the most milk and fat, and produced it at the lowest cost, but they could not, as before mentioned, be considered average grade cows of the country—in fact, they were only two (states the bulletin) out of twenty of like breeding that it was thought advisable to keep in the herd for more than one year. They illustrate the fact that among such cows can be selected individuals that will respond to good care and improved feeding in a most remarkable way.

This interesting bulletin concludes as follows:—

"Our records of this herd for the year seem to us to warrant the following conclusions:—

- 1st. With a fairly good herd, carefully fed and kept, milk can be produced for sixty-five cents per hundred weight, and fat for sixteen cents per pound for the cost of food consumed.
- 2nd. That individuals of the same breed vary more widely in milk and butter production than do the breeds themselves.
- 3rd. The larger animals consumed less pounds of dry material per one thousand pounds live weight per day than did the smaller animals.
- 4th. That in general the best yields of fat were obtained from cows that gave at least a fairly large flow of milk, particularly as seen in the cows Sue, Freddie and Beauty.
- 5th. In general, the cows consuming the most food produce both milk and fat at the lowest rate.
- 6th. For the production of milk and fat there is no food so good, so cheap as good pasture grass."

THE QUIET HOUR.

Compensation.

BY FRANCIS RIDLEY HAVERGAL.

O the compensating springs! O the balance-wheels of life, Hidden away in the workings under the seeming strife!

Even our present way is known to ourselves alone, Height and abyss and torrent, flower and thorn and stone;

Ah! If we knew it all, we should surely understand That the balance of sorrow and joy is held with an even hand.

The easy path in the lowland hath little of grand or new, But a toilsome ascent leads on to a wide and glorious view;

Launch on the foaming stream that bears you along like a dart, There is danger of rapid and rock, there is tension of muscle and heart;

O the sweetness that dwells in a harp of many strings, While each, all vocal with love, in tuneful harmony rings!

For rapture of love is linked with the pain or fear of loss, And the hand that takes the crown must ache with many a cross;

Only between the storms can the Alpine traveller know Transcendent glory of clearness, marvels of gleam and glow;

Who would dare the choice, neither or both to know, The finest quiver of joy or the agony-thrill of woe?

Great is the peril or toil if the glory or gain be great; Never an earthly gift without responsible weight;

For the swift is not the safe, and the sweet is not the strong; The smooth is not the short, and the keen is not the long;

Then hush! oh, hush! for the Father knows what thou knowest not, The need and the thorn and the shadow linked with the fairest lot.

Hush! oh, hush! for the Father portioneth as He will To all His beloved children, and shall they not be still?

Hush! oh, hush! for the Father, whose ways are true and just, Knoweth and careth and loveth and waits for thy perfect trust;

Hush, oh, hush! for the Father hath fulness of joy in store, Treasures of power and wisdom, and pleasures for evermore;

Whatever your situation in life may be, lay down your plan of conduct for the day. The half-hours will then glide smoothly on without crossing or jostling each other.

We must never undervalue any person. The workman loves not that his work should be despised in his presence. Now, God is present everywhere, and every person is his work.

Sir Samuel Romilly said: There is nothing by which I have through life more profited than by the just observation, the good opinion, and the gentle encouragement of amiable and sensible women.

Read not much at a time, but meditate as much as your time and capacity and disposition will give you leave, ever remembering that little reading and much thinking, little speaking and much hearing, is the best way to be wise.

When God intends to fill a soul, he first makes it empty; when he intends to enrich a soul, he first makes it poor; when he intends to exalt a soul, he first makes it humble; when he intends to save a soul, he first makes it sensible of its own miseries and nothingness.—Flavel.

God's ways are not our ways; and we must try to see what His way and His will is, not be simply bent on carrying out our own. We must leave all with God; we must not be over-anxious. The work is His, not ours, and He will carry it out as He sees best.

The great thing is to consecrate ourselves entirely to God's service; to live very close to Him, and to ask Him to sanctify us wholly. Then we shall be His instruments; then He will give us power from Himself; then He will use us, and we shall feel we are not our own but His.

FAMILY CIRCLE.

THE GENERAL.

The General was sixteen years old. She was a maid of all work, one of the unfortunate tribe specified as general servants, and her home was in a Bloomsbury lodging house, in a shabby-genteel street which abutted on a large square.

Melinda, the little maid who officiated at Mrs. Tilley's establishment in various useful capacities, was no poetic vision to the outward eye. She had no claims to comeliness, being red-haired, pale-faced, with freckles large and distinct, though light in color, looking as if they had been bleached by long residence in cellars.

Notwithstanding her puny appearance and pale face there was a considerable amount of vitality in her ways of speech, and, in spite of daily travellings up four flights of stairs and the arduous labors of boot blacking, her indomitable energy never abated.

This latter fact was especially agreeable to her sturdy spirit, and she promptly discarded the religious cloak which custom had compelled her to wear beneath the eyes of parish officials. In the beginning of her service she had earnestly assured her employer that she "didn't want no Sundays out, for she'd had prayers enough to last her a lifetime."

Melinda's tip-tilted nose, worn after the fashion of an arrogant terrier, sniffed a long time disdainfully at the poor curate who lodged on the top story of Mrs. Tilley's domicile, appearing to live chiefly on bread and butter with an occasional relish of bloaters or marmalade. The little General cherished a vast contempt for man comprehensively, for clerical man particularly. It was a troublesome if not always an incapable sex, destined to cause the misery of womankind.

Mrs. Tilley being a weak-minded matron, large, limp, and lachrymose, soon discovered her young subordinate's superior strength of character. Melinda was employed publicly in the service of lodgers and privately as a friendly confidant and recipient of tears.

The most frequent cause of the lady's lamentations was the errand ways of her partner, a gentleman referred to vaguely as "in business," when enquiries were pressed by prospective lodgers. So far as it could be discerned on the surface, the business consisted chiefly of tasting the taps of neighboring public-houses. The landlady, however, managed to keep him out of sight at moments when he was not presentable, and so far, being void of offence towards lodgers, they tacitly ignored his misdeemeanors.

The aspect of this girl of sixteen years holding forth on the iniquities of man was a sight to move the gods to mirth. The whole army of the shrieking sisterhood could not more adequately have maintained the equality, if not the superiority, of the female sex. With her big apron of coarse sacking enveloping her meagre form, with her bony arms akimbo (an attitude ever significant of defiance, and her tangle of curly curls shaken from beneath her formidable cap, Melinda lashed the weakness of man with unsparring criticism.

"Anyone could have told that, with them seven children on your 'ands," said Melinda severely, but without any intention of broad sarcasm. "He's took of my last half-sovereign which I hid in the tea-pot." Here Mrs. Tilley, with a fresh burst of tears, applied one eye to the spout of the much-battered britannia metal vessel which she had constituted her private bank.

"Bless me, I ain't got no patience. Who'd have a 'usband to allow of 'im to take of one's earnings!" "Perhaps it was the extra touch of contempt in Melinda's voice, or it might have been some secondary prompting of nature which now induced Mrs. Tilley to turn upon her counsel-lor and defend the sinner. "I can tell you, Melinda, there's a nobby that's downright thankful to get a husband of any sort in these bad times. It ain't every one as can be settled in life."

"Ain't you read about the census, Melinda? A million of women going abegging." "There was now a goodly stock of young Tilleys on hand to aggravate Melinda's moral perceptions and to add to her labors. "Allof 'em one wuss than other in the way of screechings and contrariness," said Melinda to the curate in a confidential moment. "Mrs. Tilley gives of 'em too much butcher's meat; there ain't nothing like it for bringing out a voice." The

General's yellow eyes flashed a quick glance at the little man. He had no voice to speak of, and very few chops and steaks found their way up to his quarters.

Coming one day, earlier than usual, to attend to the little man's needs, she found him still at his religious exercises with a Greek Testament in his hands. Her head was high aloft (this attitude was always significant of mental disturbance) and she sniffed vigorously in the course of laying the breakfast cloth and placing the tin of sardines in position. The curate urged a gentle remonstrance. "You should take some camphor, Melinda. You appear to have a bad cold."

"It ain't no cold," protested the maid, pausing with a fork in her hand, and puckering up her odd little face in a singular manner—a manner which completely extinguished her eyes. This signified a stoical suppression of tears.

"Is there anything the matter?" said the curate, not ignorant of such signs. He closed his book with a sigh and sat looking down at the clasp. There was always something the matter where he was concerned. Life had called very heavily on his capital of sympathy; the endeavor to rectify the mistakes and ignorance of others was yet his chief task.

"Matter enough," said Melinda, with a look that might have caused a hero to quail. Was she one to make such ado about nothing, that fiery glance seemed to say. "There's Mrs. Tilley been at it again. Another new baby this blessed night."

"Really! I'm afraid it can't be helped," rejoined the little man with a heavy sigh, reflecting on the perilous problem of population.

"Who wants to 'elp of it? She'll never 'ave no 'more." Here Melinda choked. "Then why do you cry?"

"She's agoin' to die." The little General's head bowed itself over the sardines. The curate rose much perturbed, He pushed his spectacles up absently and his soul was visible in his mild eyes. This proof of womanly feeling in Melinda's stony heart was something he had not expected.

"She's took awful bad, and me to be left with all them children on my 'ands, not to speak of 'im." The supreme scorn on the final pronoun was distinctive and seemed to include a world of disaster. He nigh frightened that poor sick creature to death straight off, comin' in at 3 o'clock in the mornin' as drunk as any Saturday night scum, and flourishin' of a carving knife about like a wild Injun," This graphic version of Mr. Tilley's misdemeanors was only too true.

"He didn't hurt the baby?" "Was it possible there was a tone of anticipation in the curate's question? Melinda shook her head, in decided negative, and overcome by a second burst of sorrow threw her apron over her head and rushed from the room.

The little gentleman lingered longer than usual over his scanty meal, but he did not visibly resume any spiritual exercises. Perhaps they were going on at all times. An hour or so later he was sent for to minister words of consolation to the dying woman, who, after the way of her kind, sought at her last moments the spiritual counsel she had never heeded in the days of health.

The curate found her wildly affrighted at the near approach of death, urging vain prayers that Heaven might yet spare her life. But in the short hour he spent with her he somehow found the key to rest and solace. Ah, how many remorseful and despairing deathbeds he had ministered at! How many times had he not gone down into the dark, deep waters with some struggling soul, and had carried them through the flood and nearer to the light by the might of his own faith!

When Melinda entered the sick room with some beef tea she quickly noticed the change. The poor, helpless mistress, amazed and fearful, full of terrible anguish and distress, lay calm and still, with a new dignity upon her brow. What had the curate said and done to work this change? Mrs. Tilley, peacefully smiling, looked at Melinda with other eyes. Alas, she was now beyond tears, approaching the borderland where all earthly considerations appear misty and of little consequence. Her fears were at rest, human passions were stilled, and the everlasting cloud slowly descended upon her senses.

"I've made of it myself—prime gravy beef—real strong and tasty," said Melinda, stirring the nourishment vigorously as she approached. This practical task checked the emotion which she feared might master her. "You'll 'ave a drop, Mrs. Tilley?" She lifted her yellow eyes with more entreaty than she knew. Melinda had sat up all night, and there were red rims round her strange orbs. The curate gave way at her approach, and the dying woman swallowed a spoonful of the food put to her lips.

"Where's the baby, Melinda?" she said faintly, as if recalling some distant trouble. "Oh! don't you worrit now. I know how to manage of babies."

"And him?" Melinda missed the customary burst of tears. "Him" was the familiar title of Mr. Tilley between mistress and maid. "Oh! 'im. He's slep' it off." Melinda lifted her nose, not daring to give vent to more specific abuse.

"Mrs. Tilley wishes to see her husband," interposed the curate gently. The woman turned her glance upon him with speechless thanks. "That she shan't," said the General. "'E ain't ever done 'er no good as I've seed and now—"

"And now," said the curate with a new assumption of authority, "she wants to forgive him."

"I don't believe in no forgiveness," came from Melinda's lips. "Ain't she been agoin' of 'im all 'er life, and ain't 'e been the end of it now?"

Once more the curate lifted up his voice, and there was a tone in it that was not to be resisted. "Fetch him."

She flashed defiance from her red-rimmed eyes, and then her glance fell upon the woman, looking at them both. She was going out of life, peaceful, happy, because he, the little half-starved curate, had whispered the secret of eternal rest. Hitherto religious practices had appeared unavailing and without sincerity or meaning, but now the advantages did not appear so doubtful, inasmuch as they were able to bring comfort at the last to a frenzied soul. In that one short glance, something in it after all, my friends.

With lowered head the girl passed out of the room on her mission. She found Mr. Tilley in an underground apartment, in a state of tremulous anticipation. He was dimly conscious that he had committed himself in some un pardonable way on the previous night, but he had fortified his nerves against the revelation of his misdeeds with the customary solace. He now remembered more clearly stumbling up to his wife's bed chamber, and being hustled out by Melinda with a savage burst of speech. Then came the vision of a doctor hurrying up the stairs, and the scared apparition of Louisa, his eldest born, peering over the landing. His hand was cut and plastered. The phantasmagoria of real and unreal troubled him severely, and he was about to have recourse a second time to his familiar friend when Melinda's entry arrested him.

"You're to come," she said briefly. "Whatever do you mean now?" he said, with a maudlin assumption of dignity.

"She wants to forgive you."

This benevolent promise appeared to have no great attraction for Mr. Tilley. He drew back with evident reluctance. But Melinda's eyes held him fast with a compelling power. "Oh—ah," he writhed uneasily. "She's done of that before."

The General restrained the torrent of reproach which rose to her lips, and backing slowly to the cupboard, locked it and placed the key in her pocket. This manoeuvre awakened a more lively sense of interest in the man's mind. "What is it?" he said in a vain endeavour to clear away the mental fog. The girl's action had set vague tremors in motion. The locking of that cupboard was a prerogative only attached to a wife.

"She's agoin' to die." Melinda's voice was husky. "You're to go up stairs and say good-bye." Still he tarried. Then she caught the coward by the shoulders, and with all her young might pushed him towards the open door. "Go! go!" she said more vehemently. And at last he went.

(TO BE CONTINUED.)

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES :-

"Come here's a glass to the owl and the ass,
The emblem of wisdom and patience so true."

What a life of trial and worry this life below is anyway; trials great and small beset us every day and we are supposed to summon fortitude to meet them, and how often we are enjoined to be patient? Now, while patience is well enough in its way, it is not always the right ingredient. Patience will never mend the hole in the roof where the rain comes in, nor mend the heel of Johnny's stocking. Prompt action and perseverance will do far more than patience. Patience and laziness are twin sisters, and it is only the name that distinguishes them. Patience and perseverance are said to accomplish much, but perseverance will do more alone. Why extol this so-called virtue when all nature scorns it? The brooks, the rolling waves, the winds, rain, snow, and thunder and lightning, all hurry and rush; even growth of the grass and trees all speak of hurry and perseverance. And let me tell my dear nieces that the woman who is the most patient is not the most successful after all. Never leave to time what you can do at once. Too many of the actual duties of life are slipped over or left neglected because of the exercise of patience, when we know it is only an expenditure of nerve force. The birds' nests will not build themselves if the intended occupants sit and look at the spot where they want them. No. They sensibly set to work and gather material and construct it. Give your trials just enough of thought to learn how to lessen them, then set about doing so, and you will find yourself a less long-suffering and enduring, if a less patient woman.

MINNIE MAY.

Fashion Notes.

Fabrics for dresses never were prettier nor cheaper than this season, and the styles in which they are made make them look prettier still. All colors are worn, all styles too, from the bell skirt and jaunty basque to the umbrella skirt and vest with Figaro jacket. Sleeves are large on all the dresses, the leg-o'-mutton being the prettiest, but many full sleeves end at the elbow, and a tight sleeve encloses the fore-arm, with a row of buttons on the outside. The necks are finished with standing collar, others with straight band, and others with a small turnover collar; these are usually made of another color or material to the dress, as all the costumes have two colors this season. The military cape with Derby collar is worn, if any additional warmth is needed.

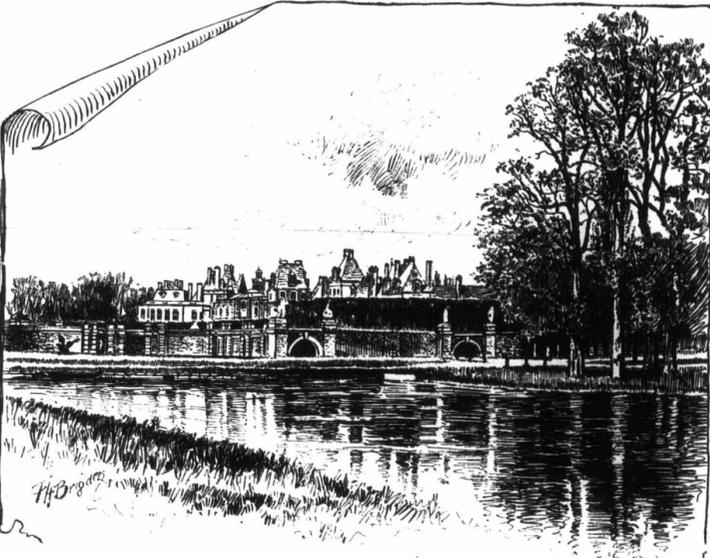
Hats are lovely dreams, suiting all faces, in all colors and in every style and at every price. Lace hats are prettiest, surmounted with a tall bunch of roses or nodding blossoms, as if they were just plucked and pinned there; veils are little worn on hats, except the Empire, but the faces look prettier without them. Straw hats can be had in all colors to suit the costume, and no very strong colors are to be seen in the prettiest ones. Pale grey with pink, black and yellow, grey and green, green of two shades, brown and pink, are some of the most striking. Parasols and sun shades are flounced or plain just as the wearer can afford, for it is a mark of the good sense of women that they do not wear what they cannot afford, and they feel themselves well dressed in a print, if they cannot get a more expensive dress. Speaking of prints, they are just the dress for summer wear, clean and neat, as a young woman's dress should be, and pretty and dressy enough for any occasion; the patterns are exceedingly choice and the colors as dainty as chambrays.

No tan shoes are worn this year,—they never were in good taste, and girls were not slow to acknowledge it; they looked conspicuous on the foot and did not accord with any costume. Black silk petticoats are just the thing for hot summer wear; light and cool, and easily brushed from dust, the "rustler" must remain in favor. A waterproof should be a part of every girl's wardrobe, and they have appeared this year in such pretty styles and colors, every taste can be suited, but do not make the mistake of buying a too expensive one; they last so long with such occasional wear that a cheaper one will answer every purpose, and can be changed in a year or two and the old one altered for the little sister, while you feel you are not guilty of extravagance in getting another.

Monday's child is sour and sad;
Tuesday's child is merry and glad;
Wednesday's child is full of grace;
Thursday's child is fair of face;
Friday's child is loving and giving;
Saturday's child must work for a living.
But the bairn that's born on the Sabbath Day,
Is good and bonnie and wise and gay.

The Palace of Fontainebleau.

Fontainebleau boasts of 9,700 inhabitants. There is a viaduct of thirty arches at the station. The exact time of the beginning to build the exquisite palace is quite uncertain. Some say the first stone was laid by King Robert, in the 11th century. The name is derived from a spring of water which existed where the town is now. It was so delicious and thought so much of by the thirsty hunters of Louis VII.'s Reign, that it was called Fontaine-Belle-Eau, and so on till it became in some years after merely Fontainebleau. Philippe Le Bel died there, and his tomb is in a church in a neighboring hamlet called Avoeu. The present palace was conceived in the 14th century, by Francis I. The principal events in French history took place there: Francis feted Charles V. of Germany, and Marechal-de-Biron was arrested there in 1602, and afterwards beheaded; Queen Cristine's favorite secretary was assassinated also there by her orders. The very saddest death also occurred there, that of the Dauphin son of Louis the 15th. The court soon after this death was transferred to Versailles, and Fontainebleau began to be neglected, and at the Revolution was stripped of all its furniture and valuable decorations, and fell into ruins. Napoleon partially restored it, and it once more became an eventful place. Charles of Spain, when dethroned by Bonaparte, was a prisoner for about twenty-eight days, and in 1809 Napoleon and Josephine were divorced, and again, shortly after this, Pope Pius the 7th became an inmate of the palace for one year and a-half—an unwilling one, too; also at



THE PALACE OF FONTAINEBLEAU.

Fontainebleau, Napoleon in 1814 signed his Abdication and bade good-bye to Imperialism. In 1834, Louis Philippe commenced its restoration, the best artists were employed, and everything restored in its original style, and the furniture renewed so that all became as it used to be. The chief entrance to the palace is by the "Cour des Adieux." There are four courts: Cour de Fontaine, Cour Ovale, Cour de Princes, and the first mentioned "Cour des Adieux"—this one was designed by an architect called Ierlic. The railway separating it from the Place-de-Ferrara was erected by Napoleon. This part of the chateau has five pavillons (I mean where the four courts are to be seen); there is a room in it, completely covered with mirrors, in which Napoleon signed his abdication (mentioned above). His writing desk is still there, and a small table covered with a glass case, on which the abdication rested. The panels and ceilings were all painted by Bouchier. From the ceiling of one room there hangs a magnificent lustre of rock crystal; this particular room was begun by Charles IX., and decorated by Louis XIII. and Louis XIV. The throne and draperies were added by Napoleon. I shall only add, that in another room the Empress Marie Louise's bed is still to be seen.

A Curious Puzzle.

Open a book at random, and select a word within the first ten lines, and within the tenth word from the end of the line; mark the word; now double the number of the page and multiply the sum by five; then add twenty; then add the number of the line you have selected; then add five; multiply the sum by ten; add the number of the word in the line: from this sum subtract two hundred and fifty, and the remainder will indicate in the unit column the number of the word, in the ten column the number of the line, and the remaining figures the number of the page.

Revised Whist Rules.

THOSE COMPILED BY A BROOKLYNITE ARE NOT IN ACCORD WITH POLE.

Among the many players of whist in Brooklyn, says the *Eagle*, is Henry Miller, of the Aurora Grata Club. He is not a drone in the hive by a long shot, and he has repaid whist for the pleasure it has given him by making a set of rules to boom the game. The rules are going the rounds of the Aurora Grata Club, and in their wake follows a wonderful revival in the pastime. The rules contain many things never heard about in connection with the sport before. Here they are, printed by consent of the author, who had them copyrighted in order that they might not go further and permanently cripple out-of-town amateurs. The rules are for professionals and are too strong medicine for lesser lights of the game.

RULES FOR PROFESSIONAL WHIST PLAYERS.

- Rule 1—Never return your partner's lead; half the fun is in seeing him play against three.
- Rule 2—If your partner calls for trumps, let him call, you just snicker.
- Rule 3—Always trump your partner's trick. What right has he to take it? He takes it to humiliate you and show your insignificance in the game.
- Rule 4—Always lead from a sneak and watch the look of contempt on your partner's countenance.
- Rule 5—Always throw away from your long suit, so that your partner can't blame you for not trumping your opponent's trick.
- Rule 6—Engage in conversation across the table and ascertain the high cards played in the suits.
- Rule 7—Revoke occasionally, as it tends to shorten the game by giving your opponents three extra tricks.
- Rule 8—Insist on looking at the last three tricks, and call your partner's attention to what has already been played.
- Rule 9—After each hand is played get up a "post mortem," and show what might have happened if your partner had played differently.
- Rule 10—As whist is supposed to be played in silence, be as hilarious as possible, so as to keep the minds of the players off the game.
- Rule 11—If you have friends in the room, it is expected that they should look into the hands of your opponents and prompt you what to play.
- Rule 12—In dealing, wet your thumb in your mouth as often as possible, so you can enjoy the feelings of the more cleanly players.
- Rule 13—If you have ace and queen only, always play out your ace first. It is only good for one trick and your adversaries ought to be allowed to take a trick with their king.
- Rule 14—Play second hand high on first round, and if you lose the trick be thankful you are rid of a doubtful card.
- Rule 15—Always assist your adversaries in getting up a "see-saw"; it is fun to see them scoop in the tricks.
- Rule 16—If your partner is strong in trumps, weaken his hand by forcing him to trump. He won't take as many tricks as he expected.
- Rule 17—Any mistake that is made by your partner should be treated as downright stupidity; while your errors are only errors of judgment.

The above rules are becoming more popular every day. Professionals wishing to become amateurs can do so by consulting any of the standard authorities on whist.

Mr. Miller is a firm believer in the old-fashioned game, and has a scorn and horror of conventional signals and new-fangled methods. He contemplates preparing a new edition of his rules, amplifying and extending them so that the lead desired will be reduced to an absolute certainty. He suggests, for example, that when you desire clubs led, touch your left ear; when you want diamonds, close your right eye, and a similar kind of signal for each of the other suits.

Three volleys are fired over the grave of a soldier in honor of the Holy Trinity, just as in baptism people are baptised in the name of the Father, Son and Holy Ghost. The volleys are first after the solemn words—"Earth to earth, ashes to ashes, dust to dust."

UNCLE TOM'S DEPARTMENT.

Cow Bells.

With klinge, klang, klinge.
Way down the dusty dingle.
The cows are coming home.
How sweet and clear, and faint, and low.
The airy tinklings come and go.
Like chimings from some far-off tower.
Or patterings of an April shower
That makes the daisies grow.
Ko-ling, ko-lang,
Ko-ling, ko-lang, kolingle-ling le.
Way down the darkening dingle,
The cows come slowly home.
And old-time friends and twilight plays,
And starry nights and sunny days,
Come trooping up the misty ways,
When the cows come home.
With jingle, jangle, jingle.
Soft tones that sweetly mingle.
The cows are coming home.
Walyine, and Pearl, and Florine,
De Kamp, Kedrose, and Gretchen Schell,
Queen Bess, and Sylph, and Sprangled Sue—
Across the fields I hear loo-oo,
And clang her silver bell.
Go-ling, go-lang,
Go-ling, go-lang, golingle-ling le.
With faint, far sounds that mingle.
The cows come slowly home.
And mother's songs of long-gone years,
And baby joys, and childish tears,
And youthful hopes, and youthful fears,
When the cows come home.
With tingle, tangle, tingle.
Through fern and periwinkle,
The cows are coming home;
A-lottering in the checkered stream,
Where the sun-rays glance and gleam;
Clarine, Peachbloom, and Phoebe Phyllis
Stand knee deep in the creamy lilies,
In a drowsy dream.
To-link, to-lank,
To-link, to-lank, tolinkle-linke.
O'er banks with buttercup a twinkle,
The cows come slowly home.
And up through memory's deep ravine
Come the brook's old song, and its old time sheen,
And the crescent of the silver queen,
When the cows come home.
With klinge, klang, klinge,
With loo-oo, and moo-oo, and jingle.
The cows are coming home.
And over there on Merlin Hill
Hear the plaintive cry of whip-poor-will;
The dew-drops lie on the tangled vines,
And over the poplars Venus shines,
And over the silent mill.
Ko-ling, ko-lang, kolingle-ling le.
With a ting-a-ling and jingle,
The cows come slowly home.
Let down the bars, let in the train
Of long-gone songs, and flowers, and rain,
For dear old times come back again,
When the cows come home.

—Mrs. Agnes E. Mitchell

Lord Macaulay.

Thomas Babington Macaulay was born on the 25th Oct., 1800, at the mansion of his mother's sister-in-law, Rothley Temple, Leicestershire. His father, Zachary Macaulay, was an active worker in the agitation in England for the abolition of slavery. We are told that from three years old he read incessantly, for the most part lying on the rug before the fire, with his book on the floor and a piece of bread and butter in his hand. He had a splendid memory and retained without effort the phraseology of the book which he had been reading last. Mrs. Hannah Moore was fond of relating how she called at Mr. Macaulay's and was met by a fair, pretty, slight child, with an abundance of light hair, about four years old, who came to the door to receive her, and tell her that his parents were out, but that if she would come in he would bring her a glass of old spirits, a proposition which greatly startled the good lady, who had never aspired beyond cowslip wine. When asked what he knew about old spirits he could only say that Robinson Crusoe often had some. About the same time his fancy was much exercised with the threats of the law. He had a little plot of ground at the back of the house, marked out as his own by a row of oyster shells which a maid one day threw away as rubbish. He went straight to the drawing-room where his mother was entertaining some visitors, and walked into the circle, and said very solemnly, "Cursed be Sally, for it is written, cursed is he that removeth his neighbor's landmark." It would not be difficult to give an unlimited supply of stories told of this precocious child, but I think I have given enough to show that the child is father to the man. His parents never let him know that they thought him clever; like the parents of John Stewart Mill, they made him think that at four it was nothing to write verses and an essay on history. J.S. Mill tells us in his charming autobiography that he was master of several languages at an early age.

In October, 1818, Macaulay went into residence at Trinity College, Cambridge. His life at college was a brilliant one; no man could argue better, no man could interest his hearers more by apt illustration, earnest and eloquent language. Sir George Otto Trevelyan, in his brilliant biography of his uncle, tells us that Macaulay never practised composition. "Seek your minds in Cicero, was his constant advice to students. I suppose those who cannot read Cicero might seek their minds in Milton, Addison, Shakespeare, or Macaulay.

After he left college his life was full of incident; no man worked harder, no man did his work with more conscientious care. In 1823 and 1824 Macaulay contributed Monteoutour, Ivy Songs of the Huguenots, to Knights Quarterly, a magazine set up by Cambridge students. In 1824, Francis Jeffrey, who was looking out for young men who could infuse new blood into the "Edinburgh Review," published with great pleasure Macaulay's essay on Milton, a noble tribute to the puritan poet. He was a brilliant talker. In later days, we are told, Samuel Rogers, at one of his breakfasts to which he gathered many men of letters, once announced that as Macaulay was coming presently, "If anyone has anything to say let him say it now, while there remains a chance." Again, in 1822 his sister records, "Tom dined with us and stayed late. He talked almost uninterruptedly for six hours." In 1830 he entered the House of Commons as member for Colne. His speeches on the Reform Bill were splendid successes, and won for him great applause. In 1832 he sat for Leeds. In 1834 he went to India, and the work he did there as President of the Committee of Public Instruction, and President of a law commission for which he framed a code of Indian Criminal Law, earned for him enduring honor. In December, 1837, he left for England. He was terribly disappointed to find the father dead whom he so devotedly loved. He entered parliament as member for Edinburgh 1838. In 1837 appeared his fine essay on Francis Bacon: 1840, Lord Clive, and in 1841 his brilliant essay on Warren Hastings, and shortly after the Lays of Ancient Rome. In 1847 modern Athens was tired of the brilliant man of letters and statesman, Adam Black, the great publisher, stood firmly by Macaulay and he never rested until Macaulay was again member for the ancient city, and he accomplished this without Macaulay so much as delivering a speech or making any pledges whatsoever. In the year 1848 appeared the first two volumes of his history of England. It took the reading public by storm. It was read as no history had been read before. It sold better than a novel, and was more fascinating. History had never been written like it. Young ladies who had never been able to read a chapter of Hume's noble work never laid it aside until it was finished. Much has been said against it, and it has been much eulogized. Many think that the gossip that is interwoven with so much skill and effect lowers the dignity of a great historical work. Many think that he is not impartial, that the side he supports is advocated with all the skill and eloquence of a great advocate. This is right in a lawyer pleading the cause of his client, but in an historian it is undoubtedly a great blemish. Hume's history is not faultless in this respect. However much we may differ about its impartiality, there is no difference of opinion about its splendid diction, its noble tribute to King William, its masterly vindication of the liberties of Englishmen. His essays will always be read. His style is noted for ease, brilliancy and a splendid faculty for marshalling all his facts. Macaulay may be an advocate, a gossip retailer, but we only remember that no man loved liberty with a deeper love; no man hated tyrants with a fiercer hate; no man ever pleaded the cause of the oppressed with so much eloquence and so much learning; no man held political tricksters in as profound contempt, and we can only regret that he did not live to add more to his illustrious name. With his prodigious memory, his affectionate heart, his profound veneration for the literature of the old world, he stands out as one of the purest, noblest, and brightest ornaments of the nineteenth century. In 1857 he accepted a peerage. He died on the 28th December, 1859, in his chair, while reading a magazine, at Holly Lodge, Campden Hill. He was buried in poets' corner, Westminster Abbey, on January 9th, 1860.

The Popular Man.

Seldom, if ever, is it seen that a really very kind-hearted person attains to the thing called "popularity". Popularity is a curious combination of friendliness and indifference, but very popular people rarely have devoted friends, and still more rarely suffer great passions. Everybody's friend is far too apt to be nobody's, for it is impossible to rely on the support of a person whose devotion is liable to be called upon a hundred times a day from a hundred different quarters. The friendships that mean anything mean sacrifice for friendship's sake; and a man or a woman really ready to make sacrifices for a considerable number of people is likely to be asked to do it very often, and to be soon spent in the effort to be true to everyone.

But popularity makes no great demands. The popular man is known to be so busy in being popular that his offences of omission are readily pardoned. His engagements are legion, his obligations are innumerable and far more than he can fulfill. But, meet him when you will, his smile is as bright, his greeting as cordial, and his sayings as universally good-natured and satisfactory as ever. He has acquired the habit of pleasing, and it is almost impossible for him to displease. He enjoys it all, is agreeable to everyone, and is never expected to catch cold by attending a friend's funeral, or otherwise to sacrifice his comfort, because he is quite certain to have engagements elsewhere, in which the world always believes. There is probably no individual more absolutely free and untrammelled than the thoroughly popular man.

An American Politician. F. MARION CRAWFORD.

Consideration for the Little Ones.

How much is expected of little children in the way of politeness, when none is ever shown them. Their little legs carry them on many an errand for you, and never a "Thank you, dear," for encouragement, when the poor little heart longs to hear it, for it is so human in us all to want approbation. Think of your little ones oftener, mothers. You are their all; they turn to you for their wants, and are often disappointed. Some children's souls and hearts are starved for want of kindness. Try what a little bribe will do instead of punishments. More sugar on their lunch at school, or a slice of cake promised for more perseverance, or reward for efforts to do better. A very small piece of money will make the heart of many a child joyful for a long time. Try to study their natures more. All children cannot be managed alike any more than grown persons. And the present of a pet—a puppy dog or a rabbit—will make a good child often, when punishment fails. Love the little ones more, they have their rights, and ought to be respected as well as yours, but a child's feelings are rarely consulted. You constitute yourself the judge of what is best for it, and it has to submit. Try and learn to get the sympathy of your children, and all will go smoothly, and no savage memories will ever be cherished against the "Old Folks at Home."

Puzzles.

1-CHARADE.
Dear cousins, I have left my home
And friends in New Carlisle so dear;
Last Monday I sailed up the bay
And came to Bathurst in the C. P. R.
I cannot just now say how long
My sojourn here will be;
But I expect to hear of you PRIME each month,
And to have the paper forwarded me.
So, I must now, my letter close,
Lest it be too late for the mail;
WHOLE I have been transported,
You may hear from me again.
LILY DAY.

2-SQUARE WORD.
I am an "opaque substance,"
And sought for in a mine;
My second is "to elevate
In thoughts" almost divine.
My third shows "style in choosing,"
My fourth "a garret" is;
Now "the border of a sloping sail,"
Then go about your biz.
FAIR BROTHER.

3-RIDDLE.
I'm first in all sorrow, all sobbing and sighing,
But I always clear out before people start crying;
And though I'm in misery pray do not doubt me,
Neither pleasure nor happiness can live without me.
I'm in music and every sweet sound of our speech,
Yet I end in a hiss and delight in a screech;
I'm really quite useful, in fact it is said,
You can't answer a puzzle unless you've my aid.
ADA ARMAND.

4-CHARADE.
"Will you me wed?" said handsome Fred,
To pretty Nettie Ray;
"I'm LAST to keep you FIRST fine style,
If you the word but say."
"No, thanks," said she, "I'll SECOND not
My present state so sweet,
So you may woo some other maid,
My answer is COMPLETE."
ADA ARMAND.

5-BEHINDING.
Oh! Monarch Fair Brother,
With thy tantrums we will bear;
Take kindly to thy kingly gist, dear sir,
For we know you have been taking western air.
To your queries thus I do reply:
No government sit have I;
Nor a Sunday evening's honey,
I'm only a farmer's boy; that's not funny.
Whom did I think I was addressing?
Truly that is no guessing;
To you alone those honors and titles are due,
And we all know you to be a king true.
Your word is my law, my dear king,
Young Devitt, sir, booked, sir;
And your majesty now I sue
To give Miss Scott a place in SECOND canoe.
This advice to you I freely give:
Do not get a FIRST temper,
But a life of gentleness and virtue live—
That you are H. R. H. King F. B. always remember.
H. REEVE.

6-TRANSPOSITION.
Fair Canada, my native home,
Though wandering from thee now;
My thoughts quite often doth revert,
To "ye olden time," I trow.
I've left thee, though 'tis not for good,
With "Uncle Sam" to dwell;
Pray ask me not, wherefore, or why,
Or what did me impel.
Forsooth I am a rolling stone,
A rover by the way;
I roam about from place to place,
And give myself full sway.
Of me my friends cannot keep track,
I'm hard to find, 'tis true;
I'm here to-day, to-morrow where?
For thee I have no crew.
Oh! Canada, Dominion fair,
Some day, if spared, I will
Return to thee, and PRIME abide,
My heart is with thee still.
One happy thought I've cherished long,
LAST cheers I cry with ease,
For "The flag that's braved a thousand years
The battle and the breeze."
FAIR BROTHER,
St. Paul, Minn.

Answers to 15th May Puzzles.
1-Welcome. 6 C A R A T 7-Monarch.
2-Parasol. A D A G E 8-Procrastination.
3-Inanimate. R A V E N 9-Garden, ranged,
4-Injury. A G E N T gander, danger.
5-A Gate. T E N T S 10-Your, our.

Names of Those Who Have Sent Correct Answers to 15th May Puzzles.
Addison and Oliver Snider, A. R. Borrowman, Geo. W. Blythe, Morley, Smithson, Geo. Rogers, Ada Smithson, Edith Fair Brother, Thos. W. Banks, I. Irvine Devitt, Lily Day, Henry Reeve, Minnie Morrison.

MISCELLANEOUS.

Making Condensed Milk.

In 1888 Switzerland exported 11,770 tons of condensed milk, a quantity equal to 520,000 boxes, or just about 25,000,000 tins. These figures represent practically the whole of the output, for the quantity consumed in the country is insignificant compared with what is exported. Fifteen thousand cows are required to produce this quantity of condensed milk. During recent years the condensed milk industry has caught on in other countries besides Switzerland; but, even collectively, the new competitors do not approach the output of the pioneer country.

There are a great many condensed milk factories in Switzerland, most of which have sprung into life during the last five or six years, until Swiss milk brands in a shop window now present almost as bewildering a variety as the Swedish matches. The industry mainly depends, however, upon three large factories—the Henri Nestle Company, with its three works at Vevey, Bercher, and Payerne; the Anglo-Swiss Company, with factories at Cham and Guin; and the works of Lapp, at Epagny. Henri Nestle, who, like so many modern captains of industry, started life as a pharmacist, was the pioneer of the condensed milk business. His invention proved a gold mine, and at his death, a year or two ago, he was reckoned one of the wealthiest citizens of the Republic.

The process of condensed milk manufacture is exceedingly simple. Almost every village in the district tapped by one of the factories possesses a milk collecting office, to which the peasants bring the milk fresh from the cow. These milk offices are owned by separate companies, with whom the factories contract for their supplies. At the collecting-office the milk undergoes a refrigerating process. Upon its arrival at the factory it is first warmed gently over a vapour bath, and then exposed to a greater heat (not, however, exceeding 80 deg. C.) in copper vessels. The next manipulation consists in the addition to the milk of 13 per cent. by weight, of the best refined sugar. The mixture is then pumped into a vacuum-pan for condensation. There is nothing special about these vacuum-pans. They are of the kind used at almost every manufacturing chemist's, in sugar-factories, and in many other works.

The pans have a false bottom and are fitted with spiral hot water tubes. The aqueous vapour given off by the milk, which is kept boiling under low pressure, is withdrawn through the suction pump at the top of the pan. When sufficiently condensed the milk is withdrawn from the pans, cooled in vessels placed in fresh running water, packed in 1 lb. tins, and hermetically sealed. Swiss condensed milk of good quality should contain from 10 to 10.50 per cent. of fatty bodies, 8.75 to 10.25 per cent. cas-

ein, 53.25 to 55.00 per cent. of sugar, about 2 per cent. of salts, and from 23.50 to 25.25 per cent. of water. Condensed milk is exported to all countries of the world. South America and India take large quantities, and among the Chinese the milk is becoming popular as a jam, and eaten with bread. Since the commencement of 1890 an enormous impetus has been given to the Swiss condensed milk industry by the allowance of drawback of duty on sugar used in its manufacture. The immediate effect of this concession was an increase in the exports of over 20 per cent.—"Farming World."

Tuberculosis.

"What causes bovine tuberculosis?" asked a correspondent of the "Rural New Yorker" of Dr. E. T. Brush, who replied as follows:—"In a word, inbreeding. All breeders know that this practice tends to weaken the offspring, and the longer it is continued the more apparent becomes the weakness. There are two permanent varieties of the domestic breeds of the bovine tribe, one the large and the other the small form. To the latter belong the most noted distinctively dairy breeds, and to preserve their dairy qualities they have been closely inbred. The result is that they are nearly all scrofulous and tuberculous. From the large variety come the half-breeds. The distinctive breeds of each are formed by greater or less infusions of blood from the opposite variety. Among half-breeds the one most closely inbred is the Short-horn, and this is the most tuberculous. The disease develops less frequently among the beef than among the dairy breeds, because the former are generally killed while young, and are not subjected to the extra strain of giving milk. Too early fecundation is also given as another cause of tuberculosis." "Are any breeds of cattle more subject to the disease than others, and why?" "From the answer to the previous question it will be seen that the more closely a system of inbreeding is pursued and the longer it is continued, the more likely, other conditions being equal, is the strain or breed to be subject to tuberculosis. The beef breed which has been most closely inbred and which is also most tuberculous has been named. The dairy breeds which have been most closely inbred are the natives of the Channel Islands. An official of the Bureau of Animal Industry says that 20 per cent. of the thoroughbred Jerseys of the Northern States are affected with tuberculosis. The inbreeding to which this breed, as well as the other Channel Island breeds, has been subjected for many generations, and the unnatural forcing for large milk yields, have contributed to this result. These are the facts; are the deductions reasonable? Proper housing and care, avoidance of too early breeding and too long continued milking, and general sanitary precautions, will prevent the development of the disease. No cow should drop a calf before she is 3 years old."

Improving the Early Cheese.

In addition to other excellent work accomplished during the past season the effort of the Western Ontario Dairy Association in providing special instruction at four leading cheese factories in the making of first-class April and May cheese, and in operating the Babcock Milk Tester, is certainly to be recommended. As to the future usefulness of the Babcock much depends on the skill and care exercised in its use this season where introduced. These four schools of instruction have been fairly well attended, though it was hoped that more of the makers in the west would have availed themselves of the opportunity. However, fifty cheese-makers attended them and remained from one to five days each, all expressing themselves as more than repaid for coming on account of the practical knowledge received. No doubt, if this work is continued another season, larger numbers will avail themselves of the opportunity thus afforded.

Milk Preservatives.

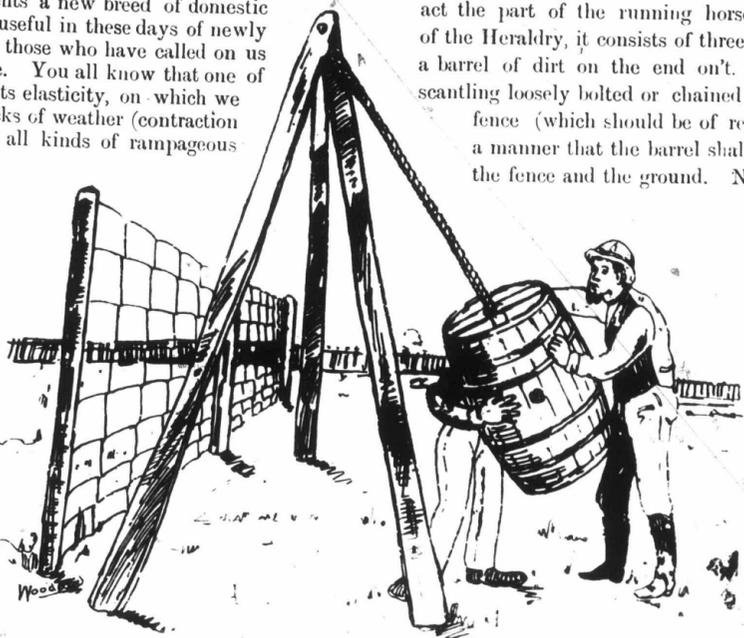
To a correspondent who asks which is the best milk preservative, the *Jersey Bulletin* replies, cleanliness and coolness. A large number of substances, such as salt, sugar, soda, saltpetre, salicylic acid, and boracic acid, have been recommended, and all of the so-called preservatives contain more or less of one or more of these substances; but we know of not one that will be of any use in keeping the milk from souring that is not more or less injurious, if taken into the human stomach. Therefore we know of no milk preservative which we can recommend anyone to use. Really none of them will keep milk fresh for any considerable time.

H. Stewart concludes a very readable article on "Feeding Work Horses," in a late *Country Gentleman*, as follows:—"The digestion of food may be very much interfered with by mistakes in watering. This should always be done before feeding, and never soon after it. The water is absorbed by the intestines with great rapidity. A few minutes will suffice to absorb three or four gallons of water, and this dilutes the salivary secretion so as to supply all the water needed for the digestion of food, and no water will then be needed soon after feeding. This avoids the washing of undigested food from the stomach into the intestines, where it ferments and produces much gas, and causes those frequent colics that on the whole reduce the usefulness of our work horses fully one-half. For every attack of disease cuts off so much of the thread of life, and there are very few horses that are not affected injuriously with colic—the result of mistakes in feeding, but more in watering—sufficiently to have an appreciable result on the duration of life."

The ROYAL BUNTER

The accompanying cut represents a new breed of domestic animals which will be found very useful in these days of newly invented fences. Our agents, and those who have called on us a the fairs, will recognize it at once. You all know that one of the main features of our fence is its elasticity, on which we depend for defense against the attacks of weather (contraction and expansion) as well as against all kinds of rampageous animals. Well, you cannot assert this any stronger than the next man who has a fence with no more spring than a stone wall, and the only way you can satisfy the inquirer is to prove it. Now, most animals seem to dislike a practical joke as much as their human brethren, and after being "revolutionized" by a collision with our fence, they object to repeating the game. By the way, this is an exception to the saying that "revolutions never go backwards," as they do, with us, unless it is the low fence, when comes the danger of a somersault, or perhaps a broken neck.

But, to return to the Royal Bunter (which was devised to



act the part of the running horse). If described after the manner of the Heraldry, it consists of three legs rampant, a chain pendant, and a barrel of dirt on the end on't. The legs may be of twenty-foot scantling loosely bolted or chained together, and astride the panel of fence (which should be of regular lengths of two rods), in such a manner that the barrel shall, when at rest, hang quite free from the fence and the ground. Now draw the weighted barrel as far

away as possible and push it into the fence as hard as you please. This can be repeated "until it has the desired effect," that is, prove that no amount of hammering or contraction even when concentrated on a single panel, will cause the fence to exhibit "that tired feeling" or seem to hang down on the posts. You can freely invite any other fence man to make the test. The Royal B. will soon prove whether his claims for "adjustable tension" and "self-regulating" are well founded or not.—*Coiled Spring Hustler.*

PAGE FENCE LEADS.

Each year there are more miles of Page Fence used by the farmers of the United States and Canada than there are of any two other smooth wire fences. Page Fence which has been in use eight years is as good now as when first put up.

IS READY MADE.

We furnish the fence ready to be put on the posts and made with eleven horizontal steel wires tied by a cross-wire every foot. Each wire is coiled into a perfect spring its entire length, which keeps the fence from sagging and adds to its strength.

NEEDS FEW POSTS.

Our five-foot farm fence needs but three posts to the hundred feet, and will not sag nor draw together between. It will turn every kind of farm stock, and stop everything but wind and snow. Including posts, it can be built at less cost than that of any other stock proof fence.

THE HUSTLER.

The above article is from our illustrated monthly paper, which will be sent free to all interested in fences. Send us your name on a post card, and we will mail the paper and a price list of fencing. Address,

**PAGE WIRE FENCE COMPANY OF ONTARIO (Limited),
WALKERVILLE, - - - - - ONTARIO**

BINDER TWINE!

Pure White Unrolled Stanley Sisal Binder Twine for only 10 cents per lb. This excellent Twine is a first quality article in every respect. It is a far better working Twine than pure manilla. We guarantee it to go through every machine without a stop or hitch of any kind. There is no oil and no lumps in this twine. Our price is 10c. per lb. It is put up in 60-lb. sacks, and on any order of not less than 120 lbs. we will prepay the freight to any station in Ontario. Our terms are cash with the order. Order as early as convenient. Our machine oil is 28c. per gallon in barrels of 45 gallons, or 30c. per gallon in barrels of 25 gallons, and on all orders of \$10 and upwards we will prepay the freight to any station in Ontario, on and after June 15th.

Terms always cash with the order.

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STANLEY MILLS & CO'Y,

WHOLESALE HARDWAREMEN,

HAMILTON, 336-a-om ONTARIO.



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The leading Canadian College for Young Women.
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Graduating Courses in Literature, Music, Fine Art, Commercial Science and Elocution. The efficiency of Canadian Colleges is conceded by all. 20 professors and teachers. 200 students from all parts of America. Heal h and home. LOW RATES. Only 3 hours from Detroit. 60 pp. illustrated announcement. President AUSTIN, A. B.

ROBERT NESS, WOODSIDE FARM,

Importer & Breeder of Yorkshire Coachers, French Coachers, Clydesdales, Shetlands and Ayrshires Cattle. Prices to suit the times. ROBERT NESS, Woodside Farm, Howick P.O., P.Q. 329-y-om

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SCOTCH-BRED SHORTHORN BULLS

Scotch-Bred Heifers, Imported Shropshire Rams, Imported Ewes, Home-bred Rams, Home-bred Ewes.

FOR SALE!

In any number. All of very best quality, and at the lowest prices. We want 500 recorded rams for ranches.

Correspondence solicited. John Miller & Sons, Brantford, Ont. Charenton Station, C. P. R., 22 miles east of Toronto. 306-2-y

ADVERTISE IN THE FARMER'S ADVOCATE AND HOME MAGAZINE.

NONE BUT THE VERY BEST ARE KEPT AT ISALEIGH GRANGE.

This is what we claim and our customers endorse. GUERNSEYS, SHROPSHIRE AND IMPROVED LARGE YORKSHIRES. Seventy-five beautiful ewes in lamb to our imported rams, winners at England's greatest shows. In Yorkshires we imported last year the cream of the English winners at the Royal, the Liverpool and Manchester, and the Royal Cornwall and other large shows, including the first-prize boar at the Royal. Do not forget that like produces like, and send in your orders for young pigs early. Address, 333-y-om J. Y. ORMSBY, Manager Isaleigh Grange Farm, Danville, P.Q.

Deep Milking Shorthorns

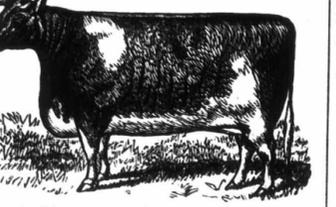
MR. GRAINGER, Lonsdale, Ont., offers for sale some exceedingly good cows and heifers. (Fair Maid of Hullett 2nd, now at test at Chicago, is only a fair specimen.) Dams made thirty pounds of butter in seven days. Come and see them; they are good ones. 338-2-y-om

MAPLE SHADE Stock Farm.

I now offer superior young SHORTHORN BULLS at reasonable prices. For full particulars address, JOHN DRYDEN, 314-2-y-om Brooklin, Ont.

New Importation!

ARTHUR JOHNSTON, Greenwood, Ont.



Reports his recently imported Cruickshank-bred safely at home, seven young bulls and six females, all of which will be sold at moderate prices. I have also exceedingly good young bulls and heifers of my own breeding for sale. Send for Catalogue. Greenwood P. O. and Telegraph Office, Claremont Station on the C. P. R., or Pickering Station on the G. T. R. Parties met at either station on shortest notice. Come and see my cattle. 323-2-y-om

SHORTHORNS, BERKSHIRES,

Plymouth Rocks, Bronze Turkeys. Write me for prices on the above. I have one of the finest show cows in Ontario for sale. Waterloo Booth strain. H. CHISHOLM, Montrose Farm, Paris, Ont. 321-2-y-om

Shorthorns, Coach Horses and Berkshires.

Our herd is headed by Daisy Chief-1108, and was highly successful in the various Western Ontario fairs of the past season. A few choice young Bulls and Heifers for sale. Also registered Berkshires and fillies, the get of Disraeli, Dalesman, etc. Write for prices, or come and see us. A. J. C. SHAW & SONS, Camden View Farm, Thamesville. 318-2-y-om

Shorthorns & Berkshires.

Some good, thrifty young stock of both sexes on hand for sale. Write for prices. 321-2-y-om JNO. RACEY, Jr., Lennoxville, P.Q.

SHORTHORN HEIFERS

A few extra good ones for sale, "Matchless" and "Minas," by Imp. General Booth (54333), that noted sire of prize-winners. Prices right, terms reasonable. Apply to W. J. BIGGINS, Elmhurst Farm, Clinton, Ont. 319-2-y-om

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OF PURE-BRED SHORTHORNS

Have always on hand and for Sale young Bulls and Females, which we offer at reasonable prices.

ADDRESS JOHN HOPE, Manager, 303-2-y Bow Park, Brantford, Ont.

SCOTCH-BRED SHORTHORNS FOR SALE

6 Choice Young Bulls And the Imported Cruickshank Bull

ABERDEEN HERO, Their sire. Also some nice Young Heifers. From one year old up. Prices to suit times. 322-2-y-om SHORE BROS., White Oak.

SHORTHORN CATTLE—A few good, useful, young bulls for sale.

PLYMOUTH ROCK FOWLS—Pilgrim strain; choice cockerels and pullets at moderate prices. Also registered Berkshires. W. T. WARD, Birchton Farm, Birchton P. O., P. Q. 321-2-y-om

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SMITH BROS., Credit Valley Stock Farm, CHURCHVILLE, PEEL COUNTY, ONT., (24 miles west of Toronto).



This is the place to get stock of best quality at reasonable prices. We have seventy-five head, including prize-takers; best strains, cows and heifers, with large milk and butter records; young bulls of superior quality. Send for catalogue. 332-2-y-om

Holstein-Friesians

OF THE CHOICEST MILKING STRAINS. Extra individuals of both sexes for sale. J. W. JOHNSON, 326-2-f-om SYLVAN, P. O.

HOLSTEIN-FRIESIAN CATTLE

Netherland, Aagie and Artis blood, along with others all of the best strains of producing blood. Write for particulars. Young Bulls and Heifers of the above tribes on hand. A grandson of Netherland Prince now for sale. G. W. CLEMONS, 334-2-y-om St. George, Ont.

Holstein-Friesians.

Owing to an important change in business, our herd will be reduced one-half. Stock the choicest, breeding the highest, and prices the lowest. All young stock bred from Silver Medal and First Prize-winning stock. Send for our new catalogue. New Dundee P. O., Ontario. A. C. HULLMAN & CO. 318-2-y-om

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None but the best are kept at BROCKHOLME FARM, Ancaster, Ont. R. S. STEVENSON, Proprietor.

Write me for prices if you want first-class stock at moderate figures. Holsteins in the advanced registry. Yorkshires all recorded. 319-2-y-om

Prize-Winning AYRSHIRES FOR SALE.

I have at present one of the largest and best herds in Ontario, which has been very successful in the prize ring. They are deep milkers and of a large size. Bulls, cows and heifers for sale always on hand. MAGGIE OF ROCKTON

JAS. McCORMICK & SON,

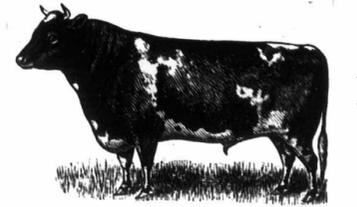
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Mine is one of the largest and most successful show herds in Canada. They are finely bred and of great individual merit. Bulls, heifers and cows always on hand for sale; also a few good Leicester sheep. Correspondence solicited. Visitors welcome. Address THOMAS GUY, 326-2-y Sydenham Farm, Oshawa, Ont.

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Breeders of AYRSHIRE CATTLE. A grand litter of young BERKSHIRE PIGS for sale. R. REID & CO., Hintonburg, Ont. One mile from Ottawa. 324-2-y-om

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GLEN ROUGE JERSEYS!

W.M. ROLPH, Glen Rouge Farm, Markham, Ont., offers for sale Jerseys of all ages from his famous herd. The world-renowned St. Lambert blood a specialty. Also registered Clydesdale Horses. 321-2-y-om

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ROBT. REESOR, importer and breeder of A. J. C. Jerseys of the choicest breeding with the St. Helier bull Otolie 17219 at the head of the herd. Stock of all ages on hand and for sale. 320-2-y-om

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Won more prizes in 1891 and 1892 than any others in Toronto, Montreal and Ottawa, and both years were awarded first and second prizes for herds at the above places. These are the ONLY HEREFORDS chosen to represent Ontario at the World's Fair. F. A. FLEMING, Proprietor, 331-f-om WESTON, ONTARIO.

HEREFORDS, STANDARD-BREDS AND YORKSHIRES.—Headquarters for the famous Tushingham blood.

Tushingham (19450) sold for \$5,000. Also standard-bred colts and fillies and pedigreed Yorkshires. 321-2-y-om J. W. N. VERNON, Waterville, P.Q.

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Herd headed by the Medal Bull of Canada, Young Tushingham 2nd (32398). All stock registered and from prize-winners, combining the desirable blood of HORACE ANXIETY THE GROVE 3rd, BRADWARDINE.

Choice young stock of the above strains for sale at reasonable prices. IMPORTED CLYDESDALES.

Prince of Wales and Darnley strains. Saddle horses and stylish drivers for sale. Station H. D. SMITH, Ingleside Farm, COMPTON, Que. 321-2-y-om

MAPLE GROVE FARM.

Cotswold and Leicester Sheep, also Improved Large Yorkshire Swine, are my specialties. C. W. NEVILLE, 322-2-y-om NEWBURG, ONT.

SHROPSHIRE, CLYDESDALES AND POLLED-ANGUS CATTLE.

Two imp. stallions, one yearling bull and eighty choice Shropshires rams and ewes of all ages. Prices reasonable. Write quick. All registered. JAS. McFARLANE & SON, 319-2-y-om CLINTON, ONT. G.T.R. Station 1/2 mile.

Having reduced my flock by recent sales I intend visiting Great Britain early in the spring to bring out my annual importation, when I shall endeavor to select the best, size and quality combined.

W. S. HAWKSHAW,

Glanworth Post Office. 326-y-om

THE GLEN STOCK FARM.

Clydesdales, Shropshires and Berkshires.—Choice young registered stock for sale. Telegraph office, Innerkip. Farm 1/2 mile from Innerkip Station on C.P.R., and 6 miles from Woodstock. G.T.R. WHITESIDE BROS., Innerkip, Oxford Co., Ont. 333-2-y-om

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Shropshires, Shorthorns, Shire Horses, Yorkshires
The Ruyton-11-Towns flock always winning at R. A. S. E. and other shows. Last win: The Champion Cup at the Royal Liverpool, Manchester and North Lancashire Show for the best ram, all ages and all breeds. Shorthorns: Winning at R. A. S. E., etc., etc. Herd established over 50 years. Yorkshire Pigs of good pedigrees. Easy distance from Liverpool. Meet trains at Baschurch, G. W. R., by appointment. Address: RICHARD BROWN, Ruyton-11-Towns, Shropshire, Eng. 322-2-y-om

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I always have for inspection and sale a large flock of pure Lincoln Long wool Sheep, including many prize-winners, having taken 80 prizes the last two years at the Royal and other shows, for both rams and ewes; also the first for the best collection of Lincoln fleeces of wool at the Royal Windsor show last year, which proves the character of this flock, which is most famous for their great size and 120 years' good breeding. Also breeder of White Yorkshire Pigs. Address: HENRY DUDDING, Riby Grove, Gt. Grimsby, Lincolnshire, Eng. 319-2-y-om

To Stockmen & Breeders.

LITTLE'S PATENT: FLUID SHEEP DIP AND CATTLE WASH.

For the destruction of Ticks, Lice, Mange and all Insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc. Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc. Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, glossy and healthy.

The following letter from the Hon. John Dryden, Minister of Agriculture, should be read and carefully noted by all persons interested in Live Stock:

"MAPLE SHADE" HERDS AND FLOCKS. BROOKLYN, ONT. Sept. 4th, 1890.

DEAR SIR,—I cannot afford to be without your "Little's Sheep Dip and Cattle Wash." It is not merely useful for Sheep, but it is invaluable as a wash for Cattle, etc. It has proved the surest destroyer of lice, with which so many of our stables are infested. I have ever tried; it is also an effectual remedy for foul in the feet of Cattle. I can heartily recommend it to all farmers and breeders.

Seventeen Gold, Silver and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in large tins at \$1.00. Special terms to Breeders, Ranchmen and others requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc., to ROBERT WICHTMAN, DRUGGIST, OWEN SOUND, Ont. Sole Agent for the Dominion. 330-2-y-om

OXFORD-DOWN SHEEP

HENRY ARKELL, Farnham Farm, Arkell P.O., Ont., Importer, Breeder & Dealer in High-class OXFORD-DOWN SHEEP

First importation in 1881. An importation expected in July. Stock for sale at all times. Minnie Miles, 5115, winner of silver cup 1892, Detroit Exposition, over all breeds. 331-2-y-om

DORSET HORN AND SHROPSHIRE SHEEP, Jersey and Holstein Cattle, SHETLAND PONIES, CHESTER PIGS.

ALL THOROUGH-BRED. JOSEPH STRATFORD, G. T. R., Brantford, Ont. 325-2-y-om

IMPORTED SHROPSHIRE

My stock was selected by myself, and consists of Shearing Ewes and Ewe Lambs from the leading flocks of England, and of the highest quality and breeding. Stock of all ages for sale.

C. W. GURNEY, Paris, Ontario. 327-y-om

1881—SHROPSHIRE—1881

My stock is established since 1881. All my ewes imported and selected in person from the most noted English flocks. A choice lot of sheep and lambs sired by a Bradburn ram. Write for prices to JAMES COOPER, Kippen, Ont. 332-2-y-om

H. J. DAVIS, Woodstock, Ont., Breeder of High-class Large Berkshire and Imp. Large White Yorkshire Swine, Short-horn Cattle.—A grand lot of young pigs ready for shipment of both breeds; also boars fit for service from prize-winning stock. Stock shipped to order. Satisfaction guaranteed. Young Bulls generally on hand. 322-y-om



S. COXWORTH, CLAREMONT, ONT., Breeder and Importer of Berkshire Hogs. Young stock of different ages constantly on hand. Pairs supplied not akin. Stock won at leading shows in 1892—1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th. Satisfaction guaranteed. Station and Telegraph Office.—CLAREMONT, C. P. R. 322-y-om



J. C. SNELL, Edmonton, Ontario.



Most of our best sows now have fine litters of young pigs sired by first-class imported boars. Three imported boars were used, so we can supply pairs and trios not akin. We have a few young sows in farrow to come in April and May. Also young boars of fall litters now in service, and young sows of same age not akin. We are now booking orders for spring pigs. Arsey Cows, Heifers and Calves for sale at reasonable prices. Stock shipped to order. Satisfaction guaranteed. Write for prices. 322-y-om

ISRAEL CRESSMAN, New Dundee, Ont. Breeder of Large English Berkshires. Young Hogs always on hand; got by imported stock. 328-y-om

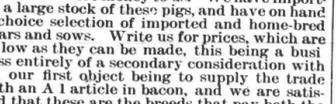
FARMERS, READ THIS

We will pay extra for fat pigs bred from Tamworth and Improved Yorkshire boars, as they are worth more money to us. We have imported a large stock of these pigs, and have on hand a choice selection of imported and home-bred boars and sows. Write us for prices, which are as low as they can be made, this being a business entirely of a secondary consideration with us, our first object being to supply the trade with an A 1 article in bacon, and we are satisfied that these are the breeds that pay both the feeder and the packer. Send in your orders quick and get a good in-pig sow, or a boar to use on grade sows.

JAS. L. GRANT & CO., Ingersoll, Ont. 320-2-y-om

TAMWORTH SWINE, SHROPSHIRE, CLYDESDALES AND SHORTHORNS.

John Bell, Clydesdale Farm, Amber, Ont. A number of prize-winning Pigs in pairs, unrelated, from imported stock bred by the best breeders in England. Orders booked. Fifteen Breeding Sows due to farrow during spring. Shropshires bred from stock imported by such importers as John Miller & Sons, Brougham; R. Caullion, Tyrone, etc. A few of the best Clydesdales on the continent.—The Granite City and Eastfield Chief at head of Stud; also Shorthorns of choice breeding. Correspondence solicited. Visitors welcome. Milliken Station (Midland Division), G.T.R. 325-y-om



CANADIAN BLACK BESS HERD

Of Registered Poland-Chinas—A choice lot of young pigs for sale. Elected 448, the great ribbon winner at the head of herd, assisted by 1st Chief, who weighs 1,000 pounds. Correspondence or inspection of herd solicited. J. J. PAYNE, Chatham, Ont. 332-y-om

THE OXFORD HERD OF POLAND CHINAS.

W. & H. JONES, Mt. Elgin, Importers and breeders of Poland Chinas. Young stock for sale sired by The Imported and Show Boar, "Elias Moor," and other good boars out of sows of equally as good breeding. 329-2-f-om

THE MARKHAM HERD, LOCUST HILL, ONT.

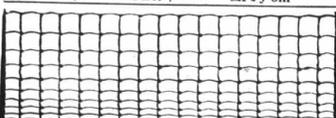
(Farm one mile from Locust Hill St., C.P.R.) Registered Improved Large Yorkshire, Berkshire and Suffolk Pigs. Stock selected from the best herds in Canada. Am booking orders for Spring Pigs.—LEVI PIKE, Locust Hill, Ont. 328-y-om

IMPROVED LARGE YORKSHIRE PIGS.

Thirty-five choice Breeding Sows from the best English breeders. Young stock of all ages. Stock supplied for exhibition purposes, registered and guaranteed to be as described. Personal inspection solicited. J. E. BRETHOUR, Burford, Brant Co., Ont. 327-y-om



J. M. HURLEY & SON, Kingston Road, Stock Farm, Belleville, Ont. Offer for sale pedigree Improved Large Yorkshire Pigs of both sexes. Herd founded in 1887. OUR AIM is to make our pigs advertise us. 321-2-y-om



ELASTICITY

Is the most important feature in a smooth wire fence. Those who dispute this have never tried our Coiled Spring article, or they are interested in some non-elastic fence. If you want facts about elastic fences, go to those who know, or try it yourself, on a guarantee.

PAGE WIRE FENCE CO. OF ONTARIO, LTD., WALKERVILLE, ONT. 325-y-om

THE BEST IS ALWAYS THE CHEAPEST

The Halladay Standard Wind-mill as improved for 1893. Is better than ever and has no equal.



It has stood the test for over forty years, which is a record no other mill can claim. We still guarantee it to be more reliable in storms than any other wind-mill made. We make several other styles both for pumping water and driving machinery. It will pay you to write us for large descriptive catalogue before purchasing elsewhere.

ONTARIO PUMP CO., LD., (IN LIQ.), Toronto, Ontario. 336-f-om

HIGH-CLASS THRESHING MACHINERY

CONSISTING OF SEPARATORS, PORTABLE and TRACTION ENGINES, TREAD and PITT'S HORSE-POWERS AND CLOVER HULLERS. Manufactured by SAWYER & MASSEY COMPANY, Ltd. HAMILTON, ONT. Send for Illustrated Catalogue. 336-c-o



Binder Twine

Pure Manilla Binder Twine manufactured at the CENTRAL PRISON

is offered direct to the farmers of the province at the following prices, freight paid to any railway station within the province as directed: Pure Manilla Binder Twine in car loads, 81 cents per lb. Pure Manilla Binder Twine in less than car loads, 89 cents per lb. The Twine is well manufactured from pure manilla without mixture of cheap New Zealand hemp or sisal, and will run about 600 feet to the pound.

Orders for full car loads are accepted only when farmers club together to take this quantity, and the order must contain the names and addresses of all who are in the club. No orders will be accepted for less than 50 pounds, or for less than full bales of 50 pounds each for any additional quantity, and no order will be filled unless accompanied by cash in registered letter, bank draft or post-office order.

On account of the unavoidable delay in commencing operations, the output of twine this season will be limited, and orders accompanied by cash will be filled in rotation as received.

Address all orders with cash to MR. THOS. QUINN, Bursar, Central Prison, Toronto, 396-a-o J. M. GIBSON, Provincial Secretary.

STOCK GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

The American Jersey Cattle Club are spending \$25,000 to promote the interests of their breed in connection with the World's Fair dairy trials.

The Warwick Kennels of Bridgeport, Conn., have sold their imported blue belton setter "Roy of Colshill" to Mr. T. G. Davey. We understand the price was close to \$500.

In a business letter Mr. Thos. Irving, Logan's Farm, Montreal, reports his stock all coming through the winter in splendid condition in spite of the cold, backward spring.

A number of grouse have been shipped from Manitoba to the vicinity of this city. They will soon be set at liberty, and we hope that ever will be that there are no berries here in winter as in Manitoba.

Mrs. E. Lawrence, London West, has a Jersey heifer now nearly thirty-two months old, which commenced to milk when one year and eight months old about two and a half months before calving. In all forty pounds of butter were made before calving.

A copy of the prize list of the Calgary Midsummer Fair, to be held on June 20, 21, 22 and 23, has just come to hand. Very liberal prizes are offered in the horse and cattle classes. The Hudson's Bay Company offer a \$500 silver cup as a sweepstake for heavy draught stallions, and specials are also offered by J. and A. Turner, Rawlinson Bros., and W. Bell Irving, in classes in which they are specially interested.

NOTICES.

WESTERN FARM LANDS. A pamphlet descriptive of the farm lands of Nebraska, Northwestern Kansas and Eastern Colorado will be mailed free to any address on application to P. S. Eastis, General Passenger Agent, C. B. & Q. R. R., Chicago. Send for one and give names and addresses of your friends.

We have received a practical little work of 160 pages, entitled "Sheep Farming," a treatise on sheep, their management and diseases. This book contains a short history and illustrations of all the different breeds. A chapter on their management describes and gives the remedy for all the common diseases of sheep. Mr. Cooper and nephews, Galveston, Texas, are the publishers.

One of the leading life insurance companies is the Mutual Reserve Fund Life Association, which does business on the instalment plan, and thereby claims a great saving in the cost of insurance. This Company has been fortunate in securing the services of Mr. James Thompson, late member for Emerson in the Manitoba Legislature, as their manager in the Northwest Territories, who is meeting with well-deserved success, and will, we trust, greatly extend the Company's already large business. For information regarding their system, write to A. R. McNichol, general manager, Winnipeg, or to James Thompson, Calgary.

Capt. W. O. McRobie has not only paid much attention to the best methods of extinguishing fire, but also to its prevention. As a result he has invented and patented a combined soot door and ventilator, which can also be used as a check draft. This complete and useful little combination should at once commend itself to all who see it, more especially to those who realize the number of fires that originate in chimneys, or to those who appreciate the value of thorough ventilation. An illustration of this soot door may be seen in our advertising columns. Full information as to cost, etc., will be furnished by applying to Capt. McRobie 44 Dagmar street, Winnipeg.

The Grand Central Railroad Station, Chicago, has been fitted for hotel purposes during the World's Fair. This magnificent, fire-proof structure, located at the corner of Harrison street, and Fifth avenue, in the very heart of the city, will devote the third, fourth and sixth floors to this purpose. It will be run on the European plan. Each room will have hot and cold water, electric lights, and steam heating. The office and ladies' parlors, etc., will be located on the third floor, and the building will be supplied with all modern conveniences. There will be from one hundred to two hundred rooms for guests. This acquisition to the hotel facilities of Chicago will be appreciated by those who wish to be safely housed in a fire-proof building, conveniently located in the city itself. Those desiring accommodations can secure them by addressing Mr. T. C. Clifford, the manager, at Chicago, Ill. The hotel was opened May 15th, 1893. The Grand Central Station is the Chicago cousin Central Pacific Railroad, Wisconsin through car line to the World's Fair city, visitors will avoid the discomforts of transfer through the city. From this station trains run direct to the World's Fair grounds at intervals during the day.

THE GARRETT FENCE MACHINE.

Garrett's Fence Machine is cheap, simple and durable. It is stoutly constructed, and none of the parts will get out of repair readily. It works so easy that any boy who is tall enough to reach the handle can turn it. Any kind of old board fences can be sawed up and woven in without splitting if desired. The young growth of willow, or any other timber cut and seasoned, makes a good and durable fence. It weaves the fence in the field from post to post, thus saving much time and expense. In this way the fence is made much tighter and more evenly than it is possible to stretch the web. Any size wire can be used. It will make a fence over rough and uneven ground; or up and down hill alike, making as good a fence as justable, pickets are always woven plumb. The fences made by this machine will turn all kinds of stock, and is much stronger than any barb wire fence, and completely obviates all danger of injury to stock. It is just as easy to fence against dogs and rabbits as against sheep, and the strongest animal cannot break through it. Descriptive circulars, testimonials and prices will be cheerfully furnished by S. H. Garrett, Mansfield, O., U. S. A.

STOCK GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

The Third Provincial Exhibition will be held at Montreal, from Monday 4th to Saturday 9th September, 1893, inclusive. All exhibits, including live stock, will be on view from the opening. Premium list will be issued soon.

Mr. Alexander Macdonald, farmer, Barranald, North West, and of Edenwood, Cupar, Fifeshire, shipped from Lochmaddy, in May, sixteen head of two-year-old Highland cattle for Canada. This is the only shipment of cattle for a number of years for a foreign port by a farmer from this district.—[Scottish Farmer.]

D. Reid & Co., Hintonburg, report among their sales of Ayrshires made this spring, the following:—The grand stock bull and prize-winner, Robbie Dick 1257, to Wm. McKay, Morewood, Ont.; Silver Prince 6220, by Silver King 5890, imp., to Archibald Kennedy, Vernon, Ont.; Sultan II, 128, to J. G. Clark, Ottawa; Gold-Dust to Peter Lunan, Que.; Battler 1258, to Alexander Fraser, Moose Creek.

Mr. Coley informs us that his Foot Rot Fluid has been used with eminent success by many of the largest flockmasters in England for many years. For hoost in calves and sheep, Coley's Hoost Cure will also be found a great boon, and will supply a want long felt. The introduction into this country of reliable remedies, that have been so extensively used and favorably known in Great Britain, will be highly beneficial and no doubt fully appreciated. Each bottle is accompanied by full directions. For particulars, see advertisement in another column.

Mr. Goodwin Preece has shipped from Cardiff a fine lot of rams and ewes for Messrs. Reid, of Souris, Manitoba, and Wells, of Manitoba. These gentlemen, who placed their order in Mr. Preece's hands, are establishing flocks in the Northwest, and decided to start with the very best imported stock that could be obtained, so that great care was taken in selecting the best and pure-bred sheep. Among them were several rams, stock ewes and lambs, and a lot of shearing ewes, which were the first choice from some of the leading flocks.—[M. L. Express.]

There left per steamship Siberian lately, a capital consignment of Ayrshires from Mr. Andrew Mitchell, Barcheskie, to Mr. Johnston, of Montreal. The consignment includes Mr. Kerr's splendid cow Yellow Bess, a well-known prize-winner at west country shows this year; a three-year-old from Mid Ascog; a three-year-old heifer from the Carston herd; three two-year-old heifers well known in the showyard, the first prize stirk at Ayr, and a bull stirk of Barcheskie breeding off Traveller. The consignment, it will be observed, is representative of good breeding, and will undoubtedly please our transatlantic critics.—[Farming World.]

D. Alexander Bridgen, writes us that he has just sent the aged bull Lord Linton = 8912 = to head the herd of W. Linton, Aurora. This is a very good and grandly bred animal, exceeding in good where Shorthorns are often deficient, namely, around the heart. He traces to the best of Warlaby and Sheriff Hutton blood. Sergeant Major (22657), the sire of the great Sir Arthur Ingram (32499), comes in no less than five times to make up this scion of the two famous herds. W. Linton knows what he is doing, and Mr. Alexander has made a mark to be proud of when he has bred a bull to fill the place Mr. Linton has for him, and also to breed one to take this bull's place in his own herd.

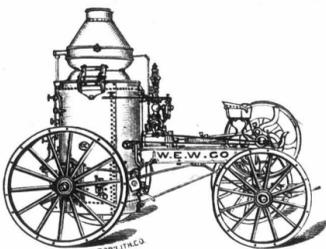
Messrs. Gibson & Walker, of Denfield and Hilderton, have recently sold to Mr. D. A. Cambell, Mayfair, Ont., a superior lot of Lincolns, including one shearing ram and a ram lamb, both from imported sire and dam; also, one two-shear ewe and two shearing ewes, all bred in the flock. All these are intended for the World's Fair at Chicago. Mr. Cambell has also purchased a pair of beautiful imported ewes, selected from Messrs. Gibson & Walker's late importation. Just as Messrs. Gibson & Walker arrived home with their flock of over seventy newly imported Lincolns, buyers were on hand to purchase the first day. Among other buyers Mr. Robert Stevens, Lambeth, selected six shearing ewes. These were from three of the most noted flocks of England, and were large, beautiful sheep.

The American Southdown Breeders' Association met in annual session at Springfield, Illinois, May 31st, 1893, President J. H. Potts presiding. The minutes of last annual meeting and of intermediate meetings were read and approved. The financial reports filed show that the Association received during the year from various sources \$1,572.59, and that the expenditures during the same period were \$1,218.83. The resources, volumes, \$1,713.58; cash, \$176.19; total, \$3490.77. Liabilities, cash premiums at Detroit Exposition, 1892, not adjudicated, \$85; cash premiums at World's Columbian Exposition offered, \$1,250—total, \$1,335. In the matter of the registry of sheep imported from England, the association expressed itself as being thankful for the good work that the Southdown Breeders' Association of England is doing, and that as a recognition therefore, the rules of entry now in force will be continued. In regard to judging and awards at the Columbian Exposition, the following were adopted: Resolved, that while preferring the single judge, the American Southdown Breeders' Association recommends that under no circumstances shall there be more than three judges appointed for any one ring. Resolved, that it is the sense of this association that awards shall be made, and the result thereof announced, while the animals are in the ring. On account of the very liberal offer of special premiums by this association, the secretary reports that the indications are that the exhibition of Southdowns will be large and of a quality that will prove their superiority in comparison with other breeds at the World's Columbian Exposition. It having been determined to hold a meeting of the association in Chicago during the World's Columbian Exposition, the election of officers and other matters not requiring immediate attention were postponed until that meeting. At this meeting to be held in Chicago, on September 27, interesting and valuable papers of the interest of sheep will be presented, and every endeavor will be made to make it a most profitable one for the interest. Sheep breeders of England, as well as America, will be welcome to meet with the association at that time.

HOW SHE MADE HER MONEY.

Mrs. E. M. Jones' New Book, "DAIRYING FOR PROFIT," Tells the Whole Story.

So anyone reading it can do the same, and secure a comfortable independence. 60,000 COPIES SOLD ALREADY! Orders still pouring in. Price, 30c. by mail; four copies to one address by mail, \$1. **ROBT. Y. BROWN, ASST.** Box 324, BROCKVILLE, ONTARIO, CANADA.



PRICES REDUCED
OF
SECOND-HAND, REPAIRED AND REBUILT
Portable Engines.

We have a large stock of Upright and Horizontal, Plain & Traction Engines, of our own and other makes. Write us before buying.

ENDLESS THRESHING BELTS

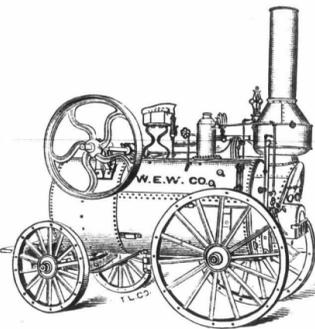
(Rubber and Stitched Cotton).
In 100, 110 and 120 feet, 6 inch, 4 ply, very long for cash.

TORRENT TANK PUMP,

With Pipe or Rubber Suction Hose.
Best in the Market.

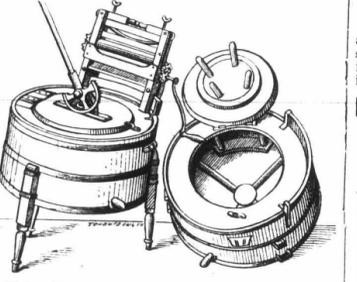
HIGH-GRADE MACHINERY.

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THE IDEAL WASHER

REALLY WASHES.



This old reliable washer is selling better than ever before. Agents wanted. Send for particulars.

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CURES OTHERS WILL CURE YOU

PURE BLOOD, PERFECT DIGESTION, SOUND SLEEP, LONG LIFE, VITALITY, STRONG NERVES, MENTAL ENERGY, CLEAR SKIN, HEALTH.

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M. Hammerly, a well-known business man of Hillsboro, Va., sends this testimony to the merits of Ayer's Sarsaparilla: "Several years ago, I hurt my leg, the injury leaving a sore which led to erysipelas. My sufferings were extreme, my leg from the knee to the ankle, being as hot as a body. After trying various remedies, I began taking Ayer's Sarsaparilla, and, before I had finished the first bottle, I experienced great relief; the second bottle effected a complete cure."

Ayer's Sarsaparilla
Prepared by Dr. J. C. Ayer & Co., Lowell, Mass.
Cures others, will cure you

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IN BRITISH COLUMBIA.

The islands of the Gulf of Georgia offer great advantages for those desirous of investing in sheep raising. We have several suitable islands 30 to 80 miles from Vancouver, containing 200 to 1,700 acres, at \$5 to \$8 per acre, deeded.

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CASH FOR FEATHERS

We are Paying Cash for all kinds of Feathers.

JUNE IS THE MONTH WHEN FARMERS SHOULD PLUCK THEIR GESE, AS OTHERWISE THE FEATHERS ARE LOST.

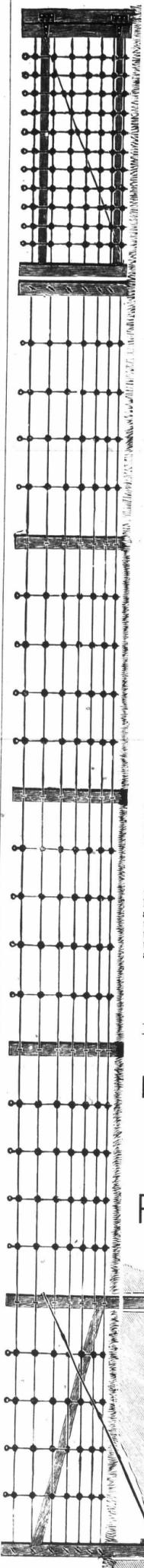
Send us Samples of what you have, and we will quote you best prices for them.

McINTOSH, WILLIAMS & COMPANY,

10 St. Sacramento Street,
MONTREAL, P. Q.
336-b-om

WANDERER CYCLES

The wheels for Canadians. Light, strong, unbreakable. Unexcelled for easy running qualities. Manufactured by the Wanderer Cycle Company, 22 and 24 Lombard St., Toronto. Send for Catalogue.



THE LOCKED-WIRE FENCE CO., INGERSOLL, ONT.

Branch Office:
141 KING ST.,
LONDON, ONT.

The accompanying Cut represents five panels of fence and gate of the LOCKED WIRE FENCE.
Each panel represents one rod (16 1/2 feet), 7 wires, 4 steel stays. The crimp in the wire, in combination with steel clamp, when locked acts as a spring, adjusting the fence to heat or cold.

PERFECTLY
Safe, Stronger, Better AND CHEAPER than any other fence.
This, without doubt, the best fence on the American continent.

All persons having wire fences erected in the past, should use the stays and steel clamps of the Locked Wire Fence Co. on them. The crimp consumes all the slack, makes the fence tight, and adds over 100 per cent. to its value at a very small cost.

We desire to inform the farmers and public generally that we are prepared to supply the material or erect this fence throughout the Dominion of Canada.

THE BEST FENCE
MADE FOR Farms and Railroads.

FARM RIGHTS

FOR SALE.

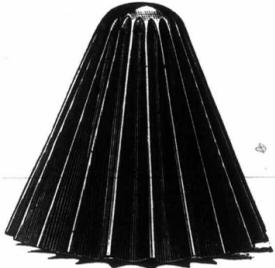
Agents Wanted
In every Township.
Send for circulars and particulars.
Address
THE LOCKED-WIRE FENCE CO., INGERSOLL, ONT.
Or—
141 KING ST., LONDON, ONT.

THE SYMMES HAY AND GRAIN CAP



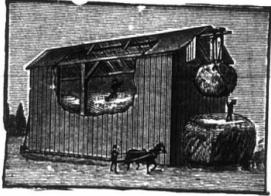
The most practical, cheap and efficient Hay and Grain Cap yet introduced. For particulars, send for circular.

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Thoroughly waterproof, tough and durable. Size, 11 1/2 inches high and 12 inches diameter at bottom. Valuable for covering transplanted plants and flowers, protecting them from sun and frost. Manufactured by THE SYMMES HAY CAP CO., Sawyerville, P.Q. 331-e-o

BUCHANAN'S
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PITCHING MACHINE
For unloading hay and all kinds of loose grain.



Unloads on either side of barn floor without changing car. No climbing necessary. Malleable Iron Cars. Steel Forks. Knot Passing Pulleys. Will work on stacks as well as in barns. Satisfaction guaranteed.



The Common-Sense Sheaf-Lifter
Works in connection with Pitching Machine, and is the most complete apparatus ever offered to the public for pitching sheaves. Sheaves left in the mow just as they come from the load.

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W. A. FREEMAN, Esq., Hamilton, Ont. Dear Sir, - I have used your fertilizers on field carrots with the very best results. I had a fine crop of very large carrots. I would recommend your fertilizers to those requiring a first-class manure. Yours, etc., (Signed) CHAS. CRAWSON, Oakville, April, 1893.
W. A. FREEMAN, Esq., Hamilton, Ont. Dear Sir, - I received to-day seven sacks fertilizers, for which I enclose \$28. I found your fertilizers especially good for turnips last year, although the season was very dry, so this year I would like to enter the turnip contest. Please send me a book of your rules when convenient, and I will do my best to give the fertilizer a help along, and oblige. Yours, etc., (Signed) ISAAC C. WILSON, Oakville, May 2nd, 1893.

Send for **FREEMAN'S NEW CATALOGUE,** Treating on Manuring and how to grow large and paying crops. - SENT FREE BY ADDRESSING -
W. A. FREEMAN, - **HAMILTON, ONTARIO.**
Please mention this paper. 335-a-om

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PIVOTED LAND ROLLER

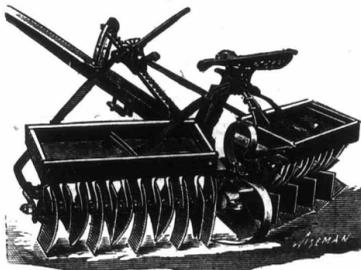
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Its points of advantage are too many to enumerate. Some of them are:

The bearings are the only wearing parts and are guaranteed to last from Ten to Fifteen Years, and can be replaced at a nominal cost.
It rolls all the ground, no matter how rough. There is no axle shaft, no strain, and consequently no wear. It is easily oiled between the drums.
THE DEMAND IS STEADILY INCREASING. IT IS UNANIMOUSLY RECOMMENDED BY THOSE FARMERS WHO HAVE USED IT.
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Description and price furnished on application to

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The Best Pulverizer! The Best Cultivator! And The Best Harrow Ever Made.



It has no equal for pulverizing hard clay lumps. It is beyond question the best machine for making a seed bed on inverted sod. For preparing fall plowing for spring seeding, especially in heavy clay soil, where the land is baked or become hard and difficult to move. For cutting up and pulverizing any kind of stubble land, either for the purpose of starting foul seeds or fitting for seeding. It is unquestionably far superior to anything in the market for cultivating any kind of land that is very difficult to subdue. Where every other tool has failed the Spade Harrow will be found to be just the machine needed. We also manufacture the "Daisy" Barrel Churn, Cistern, Well, Force and Wind Mill Pumps, Horse Hay Forks, McKay's Patent Combination Sling. Prices and terms given on application. Address-

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The best Tread Horse-Powers and Threshing Machines made. Take the lead wherever in introduced. Also Drag and Circular Saws and Ensilage Cutters. Agents wanted. **JOHN LAR-MONTH & Co.,** Manufacturers, Pt. St. Charles, Montreal, P.Q.; **E. G. Prior & Co.,** Agents, Victoria, B.C.; **A. L. Gruggen,** Agent, Moosomin, N. W. T. 334-j-om

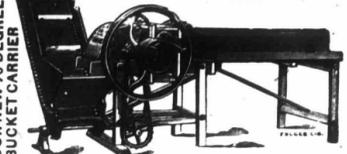
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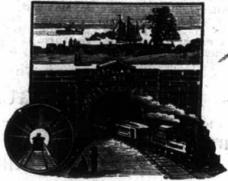
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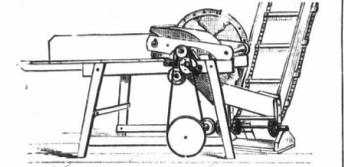


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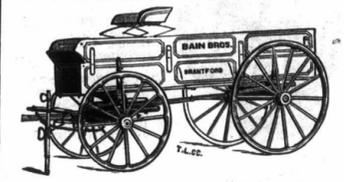
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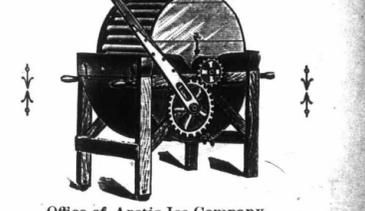
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